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OF THE

MINNESOTA

State Medical Society.

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E. A. HOLMES, M. D.

THIRD VICE-PRESIDENT:

C. O. COOLEY, M. D.

RECORDING SECRETARY AND ACTING TREASURER:

C. B. WITHERLE, M. D.

CENSORS:

FOR THREE YEARS—R. J. HILL, M. D.
J. W. ANDREWS, M. D.

FOR TWO YEARS— S. C. McCORMICK, M. D.
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FOR ONE YEAR— J. C. RHODES, M. D.
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PROCEEDINGS

OF THE

TWENTY-FIRST ANNUAL MEETING

OF THE

Minnesota State Medical Society.

The Society met at 10 A. M., Thursday, June 20th, 1889, at the West Hotel, Minneapolis, the President, Dr. Wheaton, in the chair.

The session was opened with prayer by the Rev. Charles F. Thwing.

The Right Rev. Bishop Fitzgerald welcomed the Society to the city in a witty and entertaining address.

Drs. Arthur Sweeny, J. H. Dunn and F. A. Blackmer were appointed the committee on new members.

The committee on nominations of chairmen of sections was appointed as follows: Drs. E. J. Abbott, Ohage, J. W. Macdonald, W. A. Jones, R. L. Moore, Dampier, L. P. Dodge, Merrill, Flinn and Puffer.

Dr. Dunsmoor, the chairman of the Executive Committee, presented to the Society the programme for the work of sections. He also, on behalf of the physicians of Minneapolis,

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invited the Society to attend the Sængerfest in the evening, and to attend a banquet at the West Hotel on Friday evening.

On motion of Dr. Dunsmoor, the Executive Committee was empowered to engage the services of a stenographer to report the discussions of papers. [A stenographer was engaged, but, not being familiar with the technical terms of medicine, refused to attempt reporting, after a short trial.]

A communication was receiven from Dr. A. L. Gihon, chairman of the National Committee on the Rush Monument, asking financial aid from the Society or its members for the construction of the monument. On motion of Dr. Hunter, Drs. Hunter, Emery and Sweeny were appointed a committee to solicit subscriptions.

The Society being informed of the serious illness of the Treasurer, Dr. S. B. Sheardown, the Secretary was instructed, on motion of Dr. Beard, to telegraph an expression of regret and sympathy to Dr. Sheardown.

A communication was received from Mr. E. F. Allen, President of the Minnesota State Pharmaceutical Association, appointing Messrs. S. R. McMasters, S. W. Melendy and H. G. Webster delegates to the meeting of the Society. On motion of Dr. Evans, they were received as delegates. They presented to the Society a manual and epitome of the National Formulary, and urged their use in prescribing.

The following resolution was introduced by Dr. Emery and unanimously carried :

Resolved, That it is the sense of this Society that the recommendations of the delegates from the Pharmaceutical Association be accepted by the members of this Society.

After listening to the Essay by Dr. McDavitt and to the President's Address, the general session was adjourned to Friday morning. The afternoon was occupied with section work.

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FRIDAY, JUNE 21ST.

The Society met at 9 A. M., the Second Vice-President, Dr. Wilcox, in the chair.

The session was opened with prayer by the Rev. R. N. McKaig.

The committee on new members reported, and the gentlemen recommended were elected members of the Society. [Their names will be found in italics in the roster at the back of this volume.]

The committee on nomination of chairmen of sections reported the following names, and the nominations were confirmed by vote of the Society:

Practice of Medicine—J. W. Bell.
Surgery—F. A. Blackmer.
Obstetrics—E. M. Brubaker.
Gynæcology—J. W. Andrews.
Materia Medica—H. M. Bracken.
Nervous Diseases—C. M. Ferro.
Orthopædic Surgery—A. Gillette.
Epidemics, Climatology and State Medicine—Mary G. Hood.
Ophthalmology and Otology—F. W. Van Slyke.
Medical Jurisprudence—A. F. Ritchie.
Medical Education—H. N. Rice.
Pathology—Thos. McDavitt.

Dr. Barto introduced a resolution expressing the confidence of the Society in Dr. Bowers' management of the Insane Asylum under his charge, and deprecating the attacks made on Dr. Bowers in various quarters. Drs. W. W. Mayo, Dunsmoor, Lincoln, Spratt and Millard spoke to the resolu-

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tion. All expressed confidence in Dr. Bowers' integrity and ability, but thought it did not become the Society to prejudge a case which was about to come before a court of enquiry.

Dr. Millard introduced as a substitute for Dr. Barto's resolution the following:

Resolved, That this Society expresses its deep sympathy for Dr. Bowers in his hour of trouble, and its confidence in his ability as a physician to properly care for the insane. We recognize his great error in the Combs case, but believe it to have been an error of judgment only.

Dr. E. J. Abbott spoke against Dr. Millard's resolution, and thought it not likely to be agreeable or helpful to Dr. Bowers.

Dr. Bowers thanked the Society for their evident sympathy, stated that he believed he should be able to set himself right with the public and the profession, and begged the Society for the present at least to refrain from passing any resolution in regard to his case.

Dr. Emery thought it unwise for the Society to take any action, though he believed that Dr. Bowers had the confidence of a large majority of the members.

On Dr. Emery's motion the resolution of Dr. Barto and Dr. Millard's substitute were laid on the table.

Dr. Beard introduced the following resolution:

WHEREAS, The proceedings of the State Medical Society are at present prejudiced by the brief period of the annual meeting; and

WHEREAS, The interest in many departments of its sectional work is diminished by the division of the Society into two sections; therefore,

Be it Resolved, That Section 7, Article 7 of the Constitution, be amended to read: The annual meetings of the State Medical Society shall hereafter extend over three days, and its sectional work shall be done in single sessions. The annual elections to be held on the

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morning of the third day. The President of the Society, or in his absence the 1st or 2d Vice-President, shall preside at the meeting of each section, and each section shall elect its own Secretary to receive papers for publication and to report the discussion thereof.

Dr. Witherle moved as an amendment that the President appoint a committee to revise the Constitution and By-Laws of the Society, considering Dr. Beard's resolution and such other changes as should seem best, and that this committee should report at the next annual meeting.

The amendment was accepted by Dr. Beard, and carried.

On motion of Dr. W. W. Mayo, the sum of $200 was appropriated by the Society for the printing of a catalogue of physicians of the State by the Board of Medical Examiners.

The Society then proceeded to the election of officers. For President, Dr. Andrews nominated Dr. J. H. Dunn; Dr. Millard nominated Dr. G. W. Wood. On balloting, Dr. Wood received sixty-one votes; Dr. Dunn received seventy-two votes, and was declared elected. The other elections were unanimous, and the names of the elected officers are shown on page 2 of this volume.

Dr. Hunter, for the Committee on the Rush Monument Fund, reported that it seemed impracticable to collect subscriptions. He moved that the Society appropriate $25 for the fund. Carried.

The general session then adjourned to meet in St. Paul on the third Thursday of June, 1890.

On account of Dr. Sheardown's illness, which has terminated fatally since the meeting of the Society, no Treasurer's report has been received.

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The following appointments have been made by the President since the meeting of the Society:

Executive Committee.

E. J. Abbott, Chairman.

Justus Ohage, A. B. Ancker.

Committee on Finance.

O. J. Evans, Chairman.

R. J. Hill, C. O. Cooley,

J. B. McGaughey, W. L. Beebe.

Committee on Necrology.

J. M. Cole, Chairman.

J. H. Murphy, T. J. Hutton,

R. J. Hill, A. W. Stinchfield.

Committee on Publication.

J. C. Markoe, Chairman.

G. A. Renz, C. B. Witherle,

F. W. Van Slyke.

Committee on Adjudging Prize.

A. J. Stone, Chairman.

A. C. Fairbairn, Park Ritchie.

Committee on Revising Constitution.

R. O. Beard, Chairman.

C. H. Boardman, W. J. Mayo,

E. J. Davis, C. B. Witherle.

Essayist—J. W. Andrews.

Alternate—W. J. Byrnes.

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PRESIDENT'S ADDRESS.

C. A. WHEATON, M. D.

Fellows of the Minnesota State Medical Society:

As your presiding officer upon this occasion, it becomes my duty to inflict upon you the annual address. Such a duty, when contemplating the body of learned gentlemen I have to address, fills me with apprehension lest I shall fail to convince you that I have something to say, and that that something is worthy your attention.

Twenty years ago this Society was reorganized. We learn from the printed transactions of 1869, that in December, 1855, it had its birth; that it died a natural death, and it was not until fourteen years later that it was resuscitated and its active growth began. It would be difficult to account for this lapse of years in its usefulness when we consider the professional timber of which it was constructed, were we not familiar with the trials and tribulations, both public and private, which were a necessary part of the preparation for our civil war, and which made so heavy a draft upon our profession. We see by these records, that the professional equilibrium was not restored until four years after the completion of that struggle.

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I would invite your attention to its progress since that time. Its members numbered one hundred and nineteen (119), and almost two-thirds of that number were contributed by four counties, viz., Ramsey, Hennepin, Fillmore and Winona. At the completion of its tenth year of life, 1879, its membership had increased to one hundred and fifty-four (154), and at the adjournment last year, which was the completion of its second decade, its roster showed three hundred and fifty-seven (357) active members.

It is well, too, to bear in mind, when speaking of the Society's progress, that at its first meeting the following resolution was offered by Dr. Day of St. Paul, and adopted:

"Resolved, by the State Medical Society assembled, that in case the legislature, now assembled, desire to protect the citizens of this State from quackery, it is the duty of this Society to co-operate with the legislature, and lend its assistance in forming all needful laws upon the subject; and that Drs. Willey, Sheardown and Stewart be appointed a committee as the organ of the Society for this purpose."

Two of that illustrious trio have joined "the majority," and while they lived to see the good toward which their resolution was directed, closely approximated, and to which they so much contributed, it remains to Doctor Sheardown alone, our beloved and revered Treasurer, to see the fructification of the seed of reform, in the sowing of which he was so closely connected. It is, indeed, a becoming comment upon the formation of such a society, to see spread upon its minutes upon its natal day this entering wedge for its continued prosperity, viz.: An effort toward securing such legislative enactment as shall effect its purification, and shall debar from entering our fair borders the flood of incompetent and irresponsible practitioners that have been a curse to many of our eastern neighbors and an opprobrium to our calling.

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As conservers of "the public weal," in a medical way, we may look back with laudable pride upon the progress made in our young and flourishing commonwealth. As a "body corporate" our influence is manifest in the perfection of its scientific institutions—its asylums and hospitals—in the administration of its State and local boards of health, in the advanced and enlightened consideration given to all matters pertaining to preventive medicine and public hygiene; in the perfection of our public school system, in the co-operative labor of our State profession in maintaining and perpetuating the usefulness of the National Board of Corrections and Charities. We have succeeded in practically utilizing the schools for medical instruction, thereby doing away with that selfish competition and rivalry which, in the race for professional supremacy, so commonly leads to weakness in their curriculum and to rottenness in the superstructure erected upon such a foundation.

We may, indeed, feel elated over our victory in securing so efficient medical legislation, and maintaining it in its integrity, against the assaults of those disgruntled few who seek its annihilation because of its relentless application to all ~~comers~~ without fear or favor, in the interest of public safety and the elevation of our profession. There is still much to be accomplished to render the present act completely successful. If we are to judge by the opposition (from our own ranks) offered it during the recent session of the legislature, it would seem that our profession, as a whole, needs awakening.

Dr. Sweeney, the present Secretary of our State Board, says: "The enforcement of the law will depend upon the active co-operation of every physician in the State. They should inform the Board of violation of the law, and use their influence with the county attorneys to have complaints investigated. The various medical societies should appropriate funds for the investigation of complaints in their several dis-

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tricts." He further says the Board has been made to feel the enmity of illegal practitioners who have suffered by this law, and of a few licensed physicians who have taken offense at certain restrictions.

No less than nine (9) bills, modifying and designed to destroy the efficiency of the present act, had to be combatted at the last session of the legislature, and most of these bills originated in our fraternity. If we are to be successful in this war of extermination of the unprincipled and the incompetent, we must fight in unison; and while laboring in the direction of unity of effort, so far as our own school of medicine is concerned, we must also bear in mind the necessity of recognition of those other schools of practice which the law recognizes, and which stand on the same footing with us. It is not necessary, nor is it wise, it seems to me, to multiply the examining boards, as was suggested by one of our homeopathic brethren, last winter.

Prof. Osler, in his recent able address delivered before the Medico Chirurgical Faculty of Maryland, at John Hopkins University, Baltimore, says:

"The homeopathists and eclectics will, I think, concur in the necessity of a full and proper curriculum of study in the great branches of medicine: anatomy, physiology, chemistry, histology, embryology and medical jurisprudence. Know no "isms." The differences only become glaring when we touch the subject of therapeutics; a subject in which, among members of each of the so-called schools, the greatest individual differences of opinion exist. So strong, however, is the feeling (largely an ethical one), that the divergence of opinion on this one branch separates absolutely the different classes of practitioners from each other; nor I do not say that this should not be so while antiquated dogmas are professed in opposition to a rational and free science. We cannot, however, escape from

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the important fact that in the eyes of the law we all stand equal, and if we wish legislation for the protection of the public, we have got to ask for it together, not singly. When we think of the nine or ten subjects which we have in common, we may, surely, in the interest of the public, bury animosities and agree to differ on the question of therapeutics. We must bear in mind that this legislation is but to provide police power by which we can offer and secure to the public immunity from the irregular and unscrupulous classes who are constantly seeking a foothold here.

Our present law is similar, but far superior, to that governing Illinois, North Carolina and Virginia. Its practical working has demonstrated its usefulness in those States, and certainly in our own, where out of ninety-nine applicants, thirty-five have been rejected. The necessity for its retention upon our statute books is no longer a question for debate, but we, as its progenitors, must see to it that it is not crippled by officious legislation, and that those physicians to whom has been intrusted the great responsibility of administering it, shall do their duty to the full, and shall have not only our moral, but our financial support, when needed.

There is one other matter of vital importance to us, as a body, if we would preserve our present prestige, as a class, and retain the confidence of the laity and escape just criticism: we must devote more time and care to the antiseptic handling of our surgical cases. It is not necessary that I should review the history of wound treatment for the past century; we know that surgery has been revolutionized since the advent of the teachings of the immortal Lister. We can affirm the correctness of the statement made by Gerster in his preface to his valuable little book on antiseptic surgery, "that the surgeon's acts determine the fate of a fresh wound, and that its infection and suppuration are due to his technical faults of omission or

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commission." If this statement be true, how great is the responsibility of him who assumes the care of a mutilated human being and jeopardizes that life by his neglect or ignorance. A few years ago, when the usefulness of the antiseptic principle had not been positively demonstrated, it was pardonable for us to dress recent wounds with our dirty pocket cases; to cultivate phlegmons by our conservatism in inefficient drainage, poulticing, etc.; to go from a scarlet fever patient to the lying-in woman, or from a puerperal septicæmia to an amputation; but he who does such a thing to-day, without thorough personal disinfection, is guilty of the grossest neglect, and the day is not far distant when he will, before the courts of justice, be considered criminally responsible for his contributory negligence.

Dr. Paddock in an address, delivered before the Massachusetts Medical Society in 1885, on this subject, says:

"The impression which seems to prevail in certain medical circles that this method is adopted by the entire medical fraternity, is incorrect; it is included, mainly, in the practice of the more prominent surgeons residing in the larger communities of this commonwealth; but there are a large number of practitioners who are occupied a greater portion of their time in the practice of medicine and are occasionally called upon to fulfill the duties of a surgeon. Many such, either from want of familiarity with principles involved in the antiseptic treatment, or because of a lack of knowledge of the details of the process of applying the dressings, fail to employ this method in their operations or in their management of accidental wounds. So far as I have observed, a similar condition prevails throughout the country."

He further says:

"In Germany, the employment of the antiseptic treatment is demanded by public opinion. A short time since a German

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surgeon performed an ordinary operation without using modern precautions, and the patient died of septicæmia; public opinion was sufficiently enlightened, discriminating and energetic to demand that the operator be prosecuted for malpractice. A similar sentiment is needed in this country to insure a more general adoption of the antiseptic treatment of wounds; a sentiment like the one which exists regarding the value and the necessity of vaccination."

While the foregoing remarks of Dr. Paddock were delivered four (4) years ago, I think many of my auditors will admit the wisdom of their repetition here to-day, and will subscribe to the sentiment they embody. Let us for a moment compare the statistics of the old and the present methods: A list of five hundred and sixty-three (563) amputations reported by Malgaigne in 1842—including amputations of the thigh, leg, foot, shoulder joint, humerus and forearm—resulted in a mortality of three hundred (300), or over fifty-two per cent (52%). Paul, in 1854, reported a list of five thousand and sixty (5060) amputations, including both upper and lower extremities, the mortality of which amounted to one thousand nine hundred and ninety-seven (1997), or over thirty-nine per cent (39%). These reports are fair illustrations of the results obtained with old methods of treatment. Schede reports three hundred and twenty-one (321) amputations, including both extremeties, treated antiseptically, with a mortality of less than five per cent (5%), and Volkman reports one hundred and thirty-nine (139) simular amputations, also under antiseptic treatment, with a mortality of less than four per cent (4%).

Such statistics, by comparison, need no comment. The enlightened, conscientious and humane medical man of to-day will add to his laurels now and to his future usefulness a lustre which can be acquired in no other way, as well as by attaining

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to perfection in the antiseptic management of his surgical cases. The layman has a right to demand, and the doctor has no right to refuse, the bestowal upon him of every protection against the omnipresent microbe; and he of the profession who fails to make the effort in this particular, is jeopardizing his peace of mind in this world, and compromising his eternal happiness, if the "eye for an eye" and "tooth for a tooth" doctrine is to be relied upon.

Fellow members, in closing I feel impelled by the recent ravages in our ranks to review briefly the life of one of our most honored members, who was but a few days since called to respond to that summons which knows no human delay. I refer to Dr. D. W. Hand, of St. Paul. His life was one replete with victories won. He was one of our medical pioneers. By the changes which our civil war occasioned he was translated from a position of professional mediocrity in the North, to one of professional prominence in the South. Through all the vicissitudes of that terrible struggle he bore manfully his part. As a surgeon in the field, as an executive in the many administrative departments with which he was connected, his various accomplishments shone with unusual brilliancy. He was beloved of his fellows because of his many noble traits of character, and at the completion of his country's service at the grand finale, in the Carolinas, when the scattered and shattered remnants of the Union Army within his jurisdiction were being decimated by yellow fever and the various other malignant types of fever that then and there prevailed, he, with a few other devoted followers of the craft, stayed and fought it through to victory and the end. He suffered much, and bore to his grave the traces of that noble, self-sacrificing labor. He was the champion of the younger men of the profession, and was universally beloved by them. He loved the profession for itself and for the good he could do in it. Many,

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many times have I gone to him for advice and consolation, and never did I come away empty handed.

He is gone. Never again can we be guided by his wisdom or cheered by his sunny counsel, but we can emulate the noble example he has set, and pray that a share of the halo which has followed him may be our portion when the angel Gabriel shall announce the oncoming of the sleep that knows no awakening.

How sincerely may it be said of him "Well done, good and faithful servant, enter thou into the joy of thy Lord."

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ESSAY.

THOS. MCDAVITT, M. D.

ACNE.

With the exception of eczema, acne is met more frequently than any form of skin trouble. In common with eczema it is very intractable. Indeed, according to many authors, it is one of the opprobiums of the profession in skin disease. How often do we have presented us the red, congested face, with the numerous hard points, the comedones at the extremities of the enlargements, the whole skin thickened, and frequently numerous phlegmonous swellings scattered about! How often we see them and with how little faith in the ultimate cure do we attempt treatment. That, at least, has been the experience of your essayist, and I think will correspond with that of all present.

Derivation.

The term acne is derived from the Greek, meaning vigor, and as remarked by the classical Erasmus Wilson, "would seem to imply, what is really the case with regard to the disease, namely, that it prevails during the mid-period of life, from the age of puberty to the commencement of old age." In fact the disease occurs mostly in youth and middle age.

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Definition.

It is according to Denslow "an inflammation in or around the sebaceous glands, due either to a retention of sebaceous matter in the glands from over-secretion, or to accumulation of the same from inertia or inadequacy of the expelling force; also to a combination of these causes." All authors agree in attributing the primary seat of trouble to the sebaceous glands.

Symptoms.

Acne is characterized by the occurrence of numerous light red or dull crimson papules, nodules or indurations, usually not painful but sometimes quite tender. These generally occur on the face, but sometimes on other parts of the body. There is frequently healthy skin between the diseased parts, and often the surrounding tissue is congested and infiltrated. Frequently two or more diseased sebaceous follicles will coalesce forming a large induration or phlegmon several lines in extent. Sometimes the whole diseased surface will take on an active inflammatory type. This inflammatory action ending sometimes in the extremity of the point giving way and the peculiar secretion of the disease exuding. This secretion consisting of the diseased sebaceous material, with frequently pus from the inflammatory action in surrounding tissues. Frequently only numerous black specks or points are seen on the face. These points can generally be squeezed from the tissues and are called comedones. They prove to be the sebaceous material, somewhat changed in consistency and character with part next to surface blackened from contact to the air. When the disease is limited entirely to the sebaceous gland, without sufficient inflammatory action to suppurate, we find many more of the black points or comedones than otherwise.

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The disease has been divided into several varieties: Hyde having no less than ten, Squire seven, Cazenave four; Wilson and Neligan have simplified the matter by reducing the number to two varieties—A. simplex or vulgaris, and A. rosacea. To this might be added the A. sebacea of Biett.

Acne simplex may consist in the eruption of only a few pustules on the face, or small patches of acne distributed over considerable cutaneous surface. This usually occurs in young persons, appearing frequently in spring and autumn, and disappearing more or less in summer and winter. The pustules whether few or many develop individually, and never coalesce. The pustules enlarge and frequently burst, exuding pus and the peculiar sebaceous material. A slightly inflamed base may remain. Many of the pustules do not break down; some terminate by resolution, others remain indolent and hard for weeks or months. There are no constitutional symptoms and sometimes little or no pain. Quite frequently marks or scars are left in the part where there has been a particularly violent inflammation.

Acne rosacea differs from acne simplex in degree. It is usually found in more mature life. The eruption is usually chronic. The inflamed parts may be of considerable extent, usually commencing with a red patch on which is rapidly developed a cluster of pustules or pimples, hard and but little elevated. They gradually enlarge, dark pus is formed and is eventually expelled, having a hard inflamed and painful base. The exudation frequently concretes into a hard scab from undre which the secretion continues to exude. This form when chronic assumes a very aggravated type. It presents an inflamed red appearance, and repeated inflammatory attacks may be expected.

M. Biett of Paris first described a cutuaneous eruption, terming it acne sebacea, in which the sebaceous follicle and

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its secretion became diseased, causing an oily exudation from beneath a scaly crust. Neligan however says "it in no way resembles an acne, and is more correctly classed in the group of eruptions I propose to call hypertrophies."

Etiology.

The causes of acne are numerous. Most authors think the puberal change in both sexes a frequent cause, as it often occurs at this time, but Hyde says "he is unwilling to regard a physiological crisis as a disease factor." He says, however, that the growth of hairs in both sexes at that time may cause unusual activity in the sebum-producing function, and that this physiological crisis is more easily perverted into a pathological activity.

Piffard thinks it a reflex trouble, and says he is "of firm belief that in the majority of cases it is not a primary condition, but one dependent upon irritation, derangement or disease of other organs reflected on the skin, the special organs involved being those connected with the sexual and digestive system."

Irritating cosmetics and soaps may cause the trouble. Any long continued irritation from whatever cause, or anything that retards or constricts the venous circulation may cause the disease. In females, any derangement of the uterine functions may cause the trouble. Authors also claim the disease as hereditary.

Pathology.

The microscope shows little change in the acne eruption from common inflammatory processes with exudations of pus, blood and a change in the sebaceous secretion. Simon, of Berlin, claims to have discovered in the comedones or "maggots" an epizoon called the steatozoon folliculorum.

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Whether he claims this is the primary cause of the trouble or is developed from the diseased structures, he does not state.

Prognosis.

The prognosis of the simple variety is usually good, but the trouble is likely to return frequently. The sebaceous or indurated variety is very intractable and often incurable. Hyde believes every case curable if properly managed from the first. All other authors including Wilson and Neligan express doubts in reference to the curability entirely of certain cases.

Diagnosis.

The diagnosis is seldom difficult as the symptoms are very prominent. It is to be differentiated from the syphilitic form of trouble, as that simplifies the treatment.

Treatment.

Treatment should be both local and constitutional. The inflamed parts may be bathed in hot water and steamed until softened and a bland ointment used. If the contents are sufficiently soft an opening may be made with a fine needle or bistoury to the bottom of each inflamed part and contents evacuated. If the pus-forming or diseased sebaceous gland is not destroyed however, the point will heal over and the operation will need to be repeated. Therefore it is best to treat the opening with something to destroy its characteristics, such as carbol. acid, tr. iodine, etc. A little bleeding is of benefit. A sulphur ointment to be used by rubbing over parts is sometimes useful. Wilson advises bi-chlor. hydrarg. 1 gr. to 1 oz. alchohol or eau de cologne as a valuable preparation. The green soap is also advised. Caution is necessary not to carry the use of such measures too far, so as to cause inflammatory action from the agents used.

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These measures are more adapted to cases where the trouble is sluggish.

The internal treatment consists mainly in keeping the system in good healthy condition, regulating the secretions, etc. Fl. ex. ergot has been advised by Herdaway and Heitzmann, and used with excellent results. Denslow uses it on account of his belief in its action on the muscular fibres assumed to control the action of the sebaceous glands. He reports several cases cured by the remedy. In cases where suppuration is profuse, the sulphate of calcium ¼ to 1 gr. has been used with advantage.

Owing to the theory of Piffard and others that it was a reflex trouble, Dr. Sherwed reported in Journal Cutaneous and Venereal Diseases, Vol. II, No. 2, the treatment of several cases by the introduction of the cold sound into urethra.

Dr. Denslow at meeting of the Dermatological Society in summer of 1886, reported several cases successfully treated with sounds, and reports of several cases so treated have been made in the journals during last few years.

Having seen quite a number of cases of acne in which treatment had given little good results, I beg leave to offer an account of a few cases treated within the last few months, and results.

Case I.

J. J., aged 18, consulted me Oct. 2d, 1886, in reference to an eruption on his face. His history was that the duration of the trouble had been nearly or quite a year. Face filled with acne pimples, some quite small and hard, others large, and pressure gave indications of fluid deep in the tissues. Told patient how slowly those cases progressed, and that I desired to use sounds as part of treatment. Gaining his

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consent I passed a sound. Put patient on small doses hydrarg. bi-chlor. internally. Ordered to report in a week. Next visit several of the larger indurations were pierced with a narrow bistoury, the secretions expelled and the length of wound treated with 50 per cent carbol. acid. Requested to return in a week. Next visit showed marked improvement in all the diseased portion, especially those parts treated with the acid. Passed a good sized sound each time, and treated the larger inflamed spots with incision and carbol. acid. After six or eight treatments I had the satisfaction of dismissing patient with a smooth face and only a few old scars to indicate the trouble.

Case II.

Thos. L., aged 20, presented himself September 5th, 1886. Presented the usual appearance of acne simplex, with numerous small hard sebaceous glands all over face, neck and forehead. Mr. L. was put on iod. potas. as he gave history of syphilis several years previous. This was changed to a mercurial treatment, with topical applications to face. No improvement for three or four weeks, when I began the use of sounds. The regular use of sounds, about every five to seven days, was followed by rapid improvement. Five or six treatments were followed by almost entire cleaning off of face except a few spots on forehead and neck. Heard from patient at Kasson about the middle of January. He reported good progress, but a slight reappearance on neck and forehead of the old trouble. Sent him a combination of iod. potas. and McDade, and was agreeably surprised on seeing him a few days since with face, forehead and neck almost as an infant's.

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Case III.

Fred B., aged about 20. Face and forehead covered with ugly large indurations, in fact one of the most unpromising of cases. One large phlegmon under and in front of left ear was certainly one inch long. The numerous enlargements gave him a very digusting appearance. Indeed one would very naturally think of venereal infection. He disclaimed ever having anything suspicious. I gave him the regular treatment for some time internally, liq. potas. arsenitis in tr. cinchona with steaming of face, and benz. oxide zinc ung. with dilute lead wash. No improvement. I incised numerous points and treated with carbol. acid. With a constant refilling and a high grade of inflammation in some of them, careful questioning revealed the fact that patient was suffering from frequent nightly emissions. I finally began the systematic use of the sound every five or six days, and continued treating the phlegmons by incising. Put patient upon 1 gr. sulphide calcium pills every four hours. Face to be thoroughly washed and steamed with hot water every night, and afterward treated with hydrarg. bi-chlor. 1 gr. to eau de cologne 1 oz. Bowels moved every second to fourth day with co. cath. pills. His progress has been satisfactory and rapid. Saw patient a few days ago, his face has numerous wrinkled looking patches from the effect of the old inflammatory troubles, but the old troubles are gone and the diseased parts are fast assuming a healthy condition. Has had no emission since the use of the sounds was begun some four weeks ago.

Case IV.

R. M., aged 24, came to me primarily for seminal emissions which he claimed were almost of nightly occurrence

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and frequently came on during the day with the slightest excitement. The condition of his face, which had numerous acneous spots and comedones visible, also gave him much uneasiness and mental worry. No history of venereal trouble, but as his habits had been very irregular I thought safe to put him upon siniodide hydrarg. pills $\frac{1}{8}$ gr. three times a day. Gave him a bromide, camphor and celerina mixture for his emissions. Ordered cold bathing of the genitals every night. Prohibited tobacco, at least not more than one or two cigars a day, and late hours. Directions faithfully carried out. Little or no improvement noticed for two or three weeks, except the emissions not quite so frequent. I then began the use of cold sounds. The result has been very gratifying, although only used some two weeks and not more than three times, the acne is fast disappearing and patient has had not a single emission. His skin which before was sallow and muddy looking is clearing up, and I hope a few more treatments will complete the cure.

These few cases may not be sufficient to satisfy all, that the trouble is generally reflex, but they do certainly indicate that Piffard was not far wrong in attributing acne to reflex action from the sexual or digestive system, or at least that this was a notable factor in the case.

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PRACTICE OF MEDICINE.

E. J. ABBOTT, M. D., CHAIRMAN.

THE RENAL FUNCTION AND CLINICAL INDICATIONS OF THE URINARY EXCRETION.

J. E. FINCH, M. D.

The vegetative processes in the human body consist of the formation, the circulation and the purification of the blood, the most important of which, especially from a pathological and therapeutical standpoint, are those of blood purification, regulated mainly by the lungs and kidneys. The products resulting from the oxidation of all carbo-hydrates, whence we derive most of the heat employed in maintaining the normal temperature of our bodies, as well as that from the transformation of which results all of our physical energies, are eliminated mainly through the lungs; but those products derived from the functional activity and disintegration, especially of the nitrogeneous or "master" tissues, namely, the nervous and muscular, are excreted almost exclusively through the kidneys.

The fact that no living organism can exist in its own *excretum* for more than a very short time was announced by

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M. Pasteur long ago; and what are these discarded products of protoplasmic interchange except the *excreta* of the living cells constituting the essential part of the nervous and muscular tissues? Now, these excreta, or that portion of them that is soluble in water, form the normal constituents of the urinary excretion. "Water is flowing in a continuous stream from the surface of the alimentary canal throughout the entire body," dissolving and washing these elements of excreta out of the parenchymatous tissues and conveying them to the epithelial surface of the kidneys for final elimination. If the flow of this stream be checked, more especially at the point of efflux, the central nervous tissue, being the highest in the organic scale, is the first to feel the effects of the obstruction, and the consequence is a thousand and one disturbances of the motor and sensory functions, ranging from the slightest paresis and paresthesia to complete paralysis, anesthesia and coma. As a matter of fact, almost every case of pure neuralgia that has came under my observation during the last few years has been associated with an abnormal condition of the renal excretion, and I have seen many severe cases yield promptly to treatment directed to the kidneys after all the ordinary remedies had failed. The same is true of asthma and many other nervous complaints.

And, although the muscular system is less sensitive than the nervous to the presence of abnormal elements in the circulation, still it is no less certain to suffer from the retention of its excreta and to give expression to such suffering in abnormal action. The muscular juices are speedily discharged, the normal interchanges stifled and the contractile function more or less impaired. Hence the sense of muscular weakness and consequent indisposition to exercise the muscles, the myalgia, the cramp, &c., so frequent in those laboring under disease of the kidney. The rupture of muscular fibres

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during contraction is an accident that I have seldom or never seen except where there was indubitable evidence of renal disease; and, during the last five or six years since my attention has been especially directed to this subject, I have not met with a case of undoubted cardiac dilatation and attenuation that was not associated with some form of kidney complaint, and, in a majority of cases, careful inquiry seemed to indicate that the renal had preceded the cardiac derangement.

Although the master tissues are the first to feel and react against deleterious substances in the circulation, still, "as there is no part without its function," and, as functional activity implies the formation and discharge of egesta, so there is no part but must, sooner or later, suffer impairment of function unless such egesta be promptly removed.

So much, then, for the disturbance of function consequent on obstructions in that important stream, which, under normal conditions, removes the excreta of the parenchymatous cells as fast as discharged into the channels of the cement substance; and they comprehend a considerable part of all the so-called nervous and functional diseases.

And it is at this point where active hyperæmia and vicarious function, especially the latter, may exercise a powerful influence towards relieving local obstruction and quieting disturbance.

Although in many instances there may be important concomitant and modifying influences, still I think it can hardly be doubted that the accumulation of protoplasmic egesta is the primary factor in most cases of inflammatory and specific disease, including parenchymatous inflammation or the so-called cloudy swelling, the second factor being "the implantation of lower oganisms." (Rindfleisch.)

So long as the normal forces of blood and tissue interchange are unimpaired, and the currents unobstructed, the

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conditions are unfavorable to the well-being of these organisms, and they are incapable of effecting a lodgment, but when they are introduced into a locality where the soil has been prepared for their reception by an accumulation of their pabulum, where sluggish currents give them time to form attachments, then they settle and commence a luxuriant proliferation. And in our present state of knowledge we have no escape from these insidious foes, but are continually exposed to the attacks of perhaps the greater number of them. We live and move in a sea of them. "They fly, jump, and crawl upon us, are inhaled with the air, acquired from clothing and utensils, and are rubbed in and inoculated in a thousand and one different ways." (Ibid.) And it might have been added that we are compelled to both eat and drink them.

Moreover there seems to be good reason to believe that the products evolved by the proliferation of pathogenic organisms, many of which are as yet undiscovered, as well as the debris resulting from their death and decay in the body are, in many instances, more pernicious in effect than their direct ravages on the tissues. Now these products are mostly of a nitrogenous character, and consequently their elimination is effected mainly through the renal epithelia, and there would seem to be no good reason why they, or something of which they are antecedent, should not yet be detected in the urinary excretion, and thereby afford important clinical indications of morbid processes in all parts of the body. The discovery that peptone is a constant element of pus, that it is generated by the decomposing action of bacteria, and that it is always to be found in the blood and urine during the disintegration of pus-corpuscles in the system is, I think, exceedingly significant.

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Few physicians, however, give this subject the attention its importance demands. Perhaps not more than one in twenty is the possessor of a good microscope, and of the nineteen who have none, only a very small percentage could use the instrument successfully if they had it, and little more can be said of their methods of chemical analysis. Very few indeed ever do more, when attempting to "analyze" a sample of urine, than to determine the specific gravity by means of the urinometer (if they have one), note the effect on litmus paper, and employ the tests for albumen, and if the quantity passed in a given time warrants the extra trouble, test also for sugar. But even such an examination is seldom or never thought of by many practitioners unless there is something in the case calling attention specially to the kidneys; and if the results are all negative or nearly so, the case is dismissed with the assurance that his or her "water is all right."

Nevertheless, if the patient be a pregnant female, nearing her accouchement, especially if the case be a first pregnancy with rigid abdominal wells pressing the fœtus against the renal vessels, she may die in confinement of uræmic convulsions and coma. On the other hand, if the patient be a male he has probably passed the middle age; his water of late has not flowed quite so freely as formerly; he is weak, does not feel like engaging in either mental or manual work; his memory is failing; he is irritable, restless at night, but falls asleep frequently during the day; bowels constipated and appetite capricious. He is told that he is bilious and ordered a dose of cathartic pills, from which he realizes temporary relief, but soon relapses, and in the course of a few weeks dies of so-called diabetic or uræmic coma.

This is not a mere fancy sketch, but a faithful description of what has come under my own observation, not once only, but many times.

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Now, if the microscope had been used in these cases, it would have been discovered that the urine was rich in epithelial cells, most of which in all probability came from the uriniferous tubules; and, consequently, that only the most diffusible and least detrimental products of disintegrated tissue were being eliminated through the kidneys.

It is the loss of the epithelia particularly of the convoluted portion of the tubules which checks the excretion of nitrogenous elements, and these cells can, under certain conditions, undergo degeneration with astonishing rapidity and be cast off in the form of "compound granule cells or fatty detritus," thus abolishing for the time, at least to a considerable extent, the most essential part of the renal function.

But, because certain symptoms are always to be observed in connection with certain abnormal products in the urine, we are by no means warranted in the conclusion that they are associated as cause and effect.

That substances which are being continually drained off by excretion should cause such grave symptoms as those ascribed by some observers to the recently discovered acetone, diacetic acid and B. oxybutyric acid, I think extremely doubtful. The fact that the same symptoms are sometimes charged to one of these substances and sometimes to another by observers equally reliable, goes far to prove that neither of them is the true cause, and that probably some unknown body or bodies, antecedent of these substances, just as disintegrating pus is the antecedent of peptone, may yet be discovered to be the cause of these symptoms.

But it is to the functional disturbances of the nervous and muscular systems, and to the production of these as a result of insufficient elimination through the renal epithelia that I desire to call special attention in this paper.

After giving pretty careful attention to this subject for

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several years, I am convinced that in this climate a very large percentage of the deaths, especially of deaths after the middle age, is caused either directly by renal disorders, or indirectly by modifying and giving a fatal turn to other diseases.

The treatment of these derangements is so simple as to require but few words. First, diminish the work of the kidneys by dividing among organs of vicarious functions—the skin, the liver and the bowels. Second, aid the oxidation and elimination of the accumulating products, and, at the same time, check as far as possible, their further production by suspending functional activity in the nervous and muscular tissue.

Hence the reason for the efficacy of the salts of potash which oxidize and thus aid in excretion, while, at the same time, they paralyze or suspend functional activity in the parenchymatous cells of all nitrogenous tissue, thereby checking the formation of their excreta. Hence, also, the reason that aconite and digitalis are such sovereign remedies in cases of cardiac dilatation and attenuation; both check disintegration, the latter apparently by simply slowing the cardiac action; the former by its well-known property of paralyzing, like the salts of potash, all nitrogenous tissue.

Moreover, the digitalis increases the function of the renal glomeruli, thus aiding to a certain extent the injured tubules, while the aconite increases the vicarious function of the skin as no other drug, with perhaps one exception, can do.

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ACUTE ARTICULAR RHEUMATISM.

W. H. CARRUTHERS, M. D.

Acute articular rheumatism is a self-limited disease. Experiments and observation made in hospitals, with mint water as the only medicine given, have shown that the disease runs its course in from 26 to 28 days.

Treatment is directed to two objects in particular: the shortening of the duration and to lessening the chances of the heart complications.'

Rheumatism of itself is not a dangerous or fatal malady, but the heart complications are greatly to be feared. I do not wish to go into any discussion of the theories of rheumatism or what its causes are or why we so often find the peculiar heart complications. But it is not strange, that if the blood is in an acid condition, and greatly elevated in temperature, it should produce an inflammation in the lining of the heart as well as the similar membrane in a joint.

I believe anything that will combine the two objects I have indicated, viz., reduce temperature and change the blood to an alkaline condition as soon as possible, are the indications for treatment.

My experience has led me to believe that I have a good plan of treatment. I shall not say the best but one that has been the best in my hands.

I wish to report a few cases with the results of my treatment during the last three or four years. Having used the treatment laid down in our books with the usual results of having my cases last from ten days to three weeks, I tried the use of ice cold applications to the inflamed joints and the salicylate of soda internally. My results have been the most

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satisfactory, and I shall only occupy your time for a few minutes while I give results in a few of the worst cases I have met since following this plan.

My first case was a man with both knees and one ankle inflamed, I gave sod. salicylate 15 gr. every two or three hours. Towels taken from ice cold water and applied every five to ten minutes or as fast as they became warm. His temperature 104°, at my visit next morning was 100°, pain and swelling nearly gone, having entirely disappeared by next morning.

Case 2.—Mrs. M. had been sick for two weeks with rheumatism, but considered well by her attending physician, who had dismissed the case. The next night she sent for me. I called at midnight on my return from other work to find her suffering greatly with an inflamed knee, high fever and knee apparently so tender she could or would not be moved or hardly touched. I directed cold towels applied to the knee. She evidently thought I must be either drunk or crazy as I was a stranger to her. But her husband, thinking the doctor's word must be law, set about carrying out my directions. At my morning visit pain all gone and swelling going, temperature about normal. I kept track of this case for two or three years, and she had no more attacks. I speak of this as some claim after salicylic acid or salicylates relapses are frequent. I have not found it so in my cases.

Case 3.—Mr. G., an elderly man, with right wrist and elbow and left elbow and shoulder afflicted. I directed, as usual, soda salicylate and cold water; when he found how much relief he obtained he got some snow which he put into towels and packed that about his sore joints. At my second visit he was only complaining of a little stiffness of the

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afflicted joints, which had all disappeared by the next day, and he went to his office.

Case 4.—Miss M. In this case I was not so successful, but it will do to point a moral. When I called, I found her with her wrists and knuckle joints and one ankle afflicted. Her temperature was very high, about 105°. I prescribed as usual, and at my second call found no improvement. I was surprised, but on close inquiry found that the cold had been applied not more than two or three times since my last visit. I made a few pointed remarks, and received a note in an hour or two telling me I need not call till sent for. As I have never been sent for, have not called yet; but I learned the lady had a good homeopath to attend her, and remained in her bed almost a month.

Case 5.—An Irish lad of fifteen years. His left wrist, knuckles and elbow, left knee and ankle and his right knee. I never saw anybody so bad with rheumatism before or since. His temperature was nearly 106°. I prescribed sod. salicyl. in gr. doses and ice cold applications at once. I met some opposition, as a young lady present said she had once been sick seven weeks with the same trouble, and they used warm flannels; but a neighbor, whose confidence I had, went in and set to work to carry out my directions. He told me that he heard the boy crying from the pain when two blocks from the house; but in twenty minutes after using the cold to the joints he became quiet and rested well all night. At my call, fifteen hours after my first, I found him sitting in an easy chair with his temperature 100½°, pain all gone and little swelling. In two days more he was about his work.

My last case, which I wish to report, was a German woman. When I first saw her, her right knee was enor-

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mously swollen and very painful. She lived in the country, so could not readily get ice, as it was summer time, but she began using water from the well; that was about ten o'clock in the forenoon. Being at her neighbors at eight P. M., I ran in to see her. She had as she said "gone to bed for the night." She had taken quite a large piece of ice, which she had procured somewhere, under her knee, and several small pieces wrapped in a towel laid upon it. I thought if she could stand it I could. When I called next day she was about the house at her work.

These are some of my worst cases treated in the last three or four years, with the ice water packs about the inflamed joints. None of them had relapses and most of them I have known to be free from any attacks of rheumatism since. Not one has had the least sign of heart complications.

Dr. Bartholow says, "The acute stage of a rheumatic seizure, if the first one, is not often terminated in an earlier period than two weeks, and is more frequently prolonged to three or even four weeks." Mr. Fuller's cases show under the alkaline carbonates, an average of eleven days, with only two per cent of heart inflammations. While I have not a hundred cases to report, I feel sure if carried out carefully, I can show as good results for hundreds of cases. The average duration of my cases was between two and three days, and with no heart complications, is as good a result as I could wish.

A word of caution: An old friend of mine used to say to me when I was a boy and working for him, "anything that's worth doing at all is worth doing well." Don't apply cold in any other way but *well* and *thoroughly*.

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SURGERY.

W. J. MAYO, M. D., CHAIRMAN.

CHAIRMAN'S REPORT.

Members of the Minnesota State Medical Society:

I take much pleasure in presenting to your favorable consideration, a large number of papers of surgical interest. So uniformly excellent have I deemed them that in arranging the programme I have placed each paper according to the time the author has notified me of the subject. In addition to the regular programme, I have several cases reported. Dr. C. K. Bartlett contributes a case of traumatic abscess, following a simple fracture of the femur, in an insane patient, with recovery. Dr. J. H. James reports an interesting case of successful trephining for epilepsy, and Dr. Philo E. Jones reports a similar case with an equally fortunate result. It is a matter of much regret that other duties prevent these gentlemen from personally presenting their papers and opening a discussion of so much interest.

Surgery has made such magnificent strides during the past year, that even a short review of the progress would

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greatly prolong the time I have alotted to myself as chairman of this section. For this reason I have departed from the usual custom and will call your attention to that troublesome disease so common in elderly men—

Prostatic Hypertrophy.

As the view I shall take of this ailment is largely mechanical, I will briefly refer to certain anatomical features of the prostate gland in support of this claim. The prostate gland is much the shape of a Spanish chestnut and stands behind the pubic arch to which it is closely connected; it surrounds the neck of the bladder and 1½ inches of the urethra, rather more of its tissue lying behind than in front of this channel. It is composed of glandular, fibrous and non-striated muscular tissue, and for all practical purposes it is a muscular funnel with its base directed towards the bladder, to which it acts as an involuntary sphincter; as the bladder contracts, the urine is forced into the prostatic portion, giving a desire for micturition which is accomplished only by the voluntary act of relaxing the cut-off muscle; if the will prohibits, the prostate contracts and forces the urine back into the bladder.

In children, the bladder is more nearly an abdominal organ and the prostate muscle of little power, so that micturition is less voluntary in its control than in adults, but as age advances the bladder sinks lower into the pelvis, and as the support of surrounding organs and muscles become weaker, the fundus sinks deeper and deeper, while the neck is attached firmly to the pubes.

Eventually, should the posterior wall of the bladder become upon a lower level than the urinary exit, with a corresponding amount of irritation from residual urine, the

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desire to urinate becomes more frequent; as this can be resisted only by the prostate, the increased labor gradually produces a hypertrophy which is at first conservative, insomuch as it enables the patient to hold his urine for a longer time.

Speaking of the cause of this sinking of the bladder into the pelvis, Harrison suggests that as man has evolved from a quadruped to a biped with change to an erect position, the weight of the abdominal viscera falls more directly on the pelvic organs with displacement of the latter downward by any force weakening their support. This idea may partially account for such troubles as hernia, hæmorrhoids and some uterine displacements. However this may be, it is evident that the bladder becomes irritable and contracts with frequency as a result of partial retention, and not only does the prostate hypertrophy from its extra work, but also as a result of the obstructed circulation and intermitting pressure.

A common example of intermittent pressure producing hypertrophy is seen in a tight shoe causing a corn, so here a bladder frequently compressing the prostate causes a fibrous enlargement along the lines of the least resistance; this in turn acting as a foreign body, aggravates the trouble.

For convenience, the prostate is arbitrarily divided into a right and left lobe; the connecting parts are called the commissures; that part of the posterior commissure lying above the ejaculatory ducts is so frequently enlarged, either as a bar or a distinct growth, that it has been dignified with the name of the third or middle lobe. As a rule it is this portion of the prostate which gives the trouble; any enlargement here acts as a dam to the free exit of urine with attending decomposition of the residual portion, and devel-

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opes a cystitis. The violent effort of the bladder to rid itself of the offending urine injures the ureter openings and forces spoiled urine into the ureters, thus extending the inflammation to the kidneys. While, as a rule, these cases are slow in developing, occasionally a temporary paralysis of an over-distended bladder with acute retention may precipitate the process, though the majority of such cases shortly recover voluntary power of micturition.

The diagnosis as a rule is easy; the age of the patient, the gradual increase of the symptoms are important points; he complains that urination is frequent, more noticeably at night; if he delays, it is slow to start and has but little projectile force and leaves an unsatisfied feeling. He may tell of hemorrhages and of pain deep seated, or in the glans penis; symptoms of chronic cystitis are always more or less present, and in many cases phosphatic stones are the result of the fermentation.

The physical examination through the rectum is of some value in showing the size of the prostate and the probable length of the prostatic urethra, but information of the greatest value is obtained by means of urethral instruments. The most important sign is obstruction to free catheterization, and if this exists, is it due to enlargement of the third lobe, is it lateral, or is there merely increased length and exaggerated curve of the prostatic urethra? Such information is readily obtained by noting the shape and length of the prostatic curve of the proper instrument and the direction necessary to glide the tip over or around the obstruction. The amount of chronic retention should also be obtained by passing a catheter into the bladder immediately after urination and measuring the urine syphoned off.

In cases of long standing, during the examination of the

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interior of the bladder by the sound, we have noticed with what ease the tip could be engaged in the mouth of the ureter, giving the feel of a fibrous band. We have no experience with the cystoscope in diagnosis. The prognosis varies with the physical condition present, but the frequently resulting interstitial nephritis should always be borne in mind, and it is probable that this form of Bright's, as a result of prostatic enlargement, is much more common than generally thought. A fatal termination is often due to the exhaustion from chronic cystitis or intercurrent disease acting on an enfeebled constitution.

Treatment naturally divides itself into palliative and radical. Palliative treatment attempts to protect the system from the absorption of poisonous extracts, and to relieve the partial retention with the cystitis and its attendant dangers. The character of the urine itself, under these circumstances, is of great importance, and is now pretty well understood. Acid urine is usually free from germs and toxic extracts, and cases in which acidity prevails will often be in comparative comfort, but sooner or later the introduction of germs with attendant decomposition of urine, and development of ptomaines, suddenly aggravates the previous symptoms, with danger of urinary fever from absorption through any abrasion of the epithelium. These abrasions are often caused by instrumentation, but may result from the forcible contractions acting on the enlarged and congested prostate, allowing infiltration of urine, and is followed by development of cicatricial tissue, just as a stricture is formed, with increase of the original difficulty.

Urinary fever with its attending rigors and sweats is a slight uræmic attack, and often accompanied by mental aberration, usually of a mild character, marked by great restlessness, talkativeness, and inability to fix the attention

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on any subject for the briefest period. It resembles, in some respects, the more maniacal insanity seen after surgical operations, especially in the old.

Quinine seems to have some value in relieving the system of such toxic effects, and undoubtedly acts on the urine itself. Benzoic acid also aids in rendering the urine more acid.

Before taking up chronic partial retention, I would remark that acute retention, in our experience, is most frequently caused by prolonged voluntary retention and exposure to cold, also that in rare instances when careful manipulation failed to pass the obstruction, immediately after aspiration had been practiced, a catheter could be entered during relaxation, and under such circumstances should be tied in place, as in a short time catheterization may again be impossible.

In chronic retention it is evident that if prolonged voluntary retention act to cause hypertrophy, patients should never hold the urine long, and as a rule regular catheterization with an aseptic instrument is the main feature of treatment. The frequency of this depends on the condition of the urine and the amount of retention; in severe cases it should be drawn every six hours. It is remarkable how few public urinals are to be found in our cities and towns as compared with Europe, where such conveniences are at short intervals and save much suffering. The cystitis should be carefully treated by washing out the bladder with antiseptics and astringent solutions. The diet should be liberal and the body warmly clad, and during acute exacerbation sufficient opium, hyoscyamus, etc., administered to relieve pain. It is important that the bowels should act daily, and for this purpose rectal injections of glycerine are of much value by relieving local congestion.

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To the rule of regular catheterization there are a few important exceptions:

1. When the partial retention is either overcome by bladder contraction or is well borne, the urine sufficiently acid to prevent decomposition and cystitis. Here frequent catheterization is not only unnecessary but a constant source of danger from infection. Hydrostatic dilatation in such cases is often of great value and is easily carried out by the patient compressing the glans penis for a brief period during micturition; the urine suddenly dammed acts as a dilator. If the symptoms increase, the use of the catheter may be begun at bedtime, and should there be any difficulty in catheterization, gradual dilatation by sounds will be useful.

In the second class of exceptions we find a thickened bladder of little contractile power, often presenting a well marked tumor in the lower abdomen, while the amount of retention is large; many of these cases also present symptoms of interstitial nephritis or a surgical kidney. The long continued cystitis has developed so much cicatricial tissue that even if the bladder should be entirely emptied it has lost the power of complete contraction and may not even collapse, so that catheterization must be employed with great caution at first, and followed by irrigation with antiseptic solutions; even then it may be badly borne and require operation. Complete retention should not be entirely relieved at once, as such practice is often followed by acute cystitis and more rarely by uræmia, suppression of urine and death. Strychnia is indicated for this atonic condition.

The third exception is when we have no choice, and operative procedures are not only justifiable but often demanded as the only resource, namely, when catheterization is impossible or so difficult as to be a constant source of danger of forming false passages or so bruising the prostatic enlarge-

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ment as to increase the obstruction and give rise to frequent attacks of fever; in this condition the third lobe plays an important part and is often the sole cause of trouble.

There are two important factors in view by operation, drainage and removal of the obstructing part if possible. The method practiced by some European surgeons, notably by Dittel, of supra-pubic puncture with the trocar and the retention of the canula, fulfils but the one of drainage. The danger of urinary infiltration is probably greater in this than in supra-pubic cystotomy, while it gives no opportunity for further exploration; its use in chronic partial retention is deservedly unpopular, but in case of acute complete retention, supervening upon chronic partial retention, when catheterization is impossible and the patient situated at such a distance as to render aspiration of insufficient frequency, then this method may be of the greatest value for temporary service, especially to the country practitioner who cannot obtain skilled assistance needed in more difficult operations. Cock's method of puncture through the rectum, as well as perineal puncture, is more difficult of execution and has no especial advantage.

Much ingenuity has been expended in contriving instruments for attack upon the prostate by the urethra; these operations are blind, consequently unsurgical, and lack the essential element of drainage. Mercier's method and instruments are best known. As usual, electricity with its occult power has been called to aid the solution of the problem. The most that can be said in its favor is that it pays—the physician. Parenchymatous injection into the gland of iodine, iodoform, ergot, etc., has been frequently tried, but it is difficult to separate the actual benefit of such practice from other measures of relief used. We have no experience with this method.

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There are two methods of attack on the bladder that fulfil ideal conditions, each giving satisfactory drainage and furnishing opportunity for removal of the obstructing portion if deemed advisable, to-wit, supra-pubic and perineal cystotomy, and I shall consider briefly their relative merits. Theoretically it would seem that drainage after perineal operation would be much better than from the supra-pubic method, but practically this is not true, as the bladder is a contractile organ, and in these cases as a rule is unusually muscular and is assisted by intra-abdominal pressure; the relief obtained to the inflamed viscus is as certain and immediate in the latter as in the former; while it has this great advantage that if it should be necessary to allow the fistulous opening to remain, there is a certain amount of continence retained, urine can be voided by voluntary effort, while after the perineal, incontinence is at once established. Whitehead, of Manchester, attempts to avoid this by making his exploration through the perineum into the urethra in front of the bladder, and after digitally exploring its cavity, should farther operation be deemed unadvisable, this fistulous tract is retained for a short catheter route.

I cannot conceive that this would be a satisfactory condition of things. As to the relative advantage as a means of exploration and operation upon the interior of the bladder the supra-pubic opening is far superior; it is astonishing with what ease such examination can be made and operation performed. But in my estimation the greatest advantage of the supra-pubic operation is the fact that, by entirely relieving the urethra of its function as a channel, the muscular prostate will atrophy from disuse, and the fibrous portion will undergo the same process as a result of checking the intermittent pressure which acted as its cause. So that many cases not amenable to safe operation will by this simple

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opening be given at once temporary relief, and after a time may regain power of urination or enter upon a comfortable catheter life; and if what Hunter McGuire calls his "teapot" operation be made, that is a low opening into the bladder sutured to the highest point in the external incision so that the fistulous tract will sustain the same relation to the bladder as a spout to the teapot, continence for some hours is readily obtained.

A contracted bladder renders the supra-pubic operation difficult, but in testing the capacity I would urge that it be done under anæsthesia, as without it a bladder irritable from prolonged inflammation will tolerate so little fluid as to indicate a contraction which does not exist. On the contrary a greatly elongated prostatic urethra is a contra indication to the perineal operation, as aptly shown in a recent paper by Watson of Boston; while he favors the perineal operation he conclusively shows that a perineal depth of over a finger's length does not allow of accurate work. For the methods of making these operations and dealing with the offending obstruction ample directions are given in late works on surgery.

From personal experience I can testify to the ease with which supra-pubic cystotomy can be made, though the perineal operation presents no special difficulties under normal conditions. While out of place in this connection I would add that in one or two instances of injury to the perineum a blind hunt in the disorganized tissues for the ruptured urethra has been happily terminated by a supra-pubic opening and a guide furnished by reversing the direction of a sound from the bladder into the urethra. As a surgical curiosity it is worthy of notice that the prostate gland has been entirely removed by means of an opening

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made by separating the pubic bones. This procedure like Langenbeck's above the penis and just under the pubic arch is open to the objection of "too much operation."

DISCUSSION.

DR. A. W. STINCHFIELD heartily approved of the paper as a whole, and thought too little attention had been given to the early treatment of these cases. The use of the catheter was especially insisted upon, and the necessity for careful hygienic and dietetic conditions surrounding the patients in aiding treatment.

DR. C. A. WHEATON said that he favored the perineal operation, which he had made seven times for the relief of these conditions; he thought this operation easier and safer.

DR. J. H. DUNN was in harmony with the views of the paper, and thought that as a rule the supra-pubic operation had the widest field of usefulness, but that the perineal was indicated in certain cases, especially if there was obstruction in the urethra below the bladder, as a stricture, thus giving relief to both conditions by the one operation.

DR. CHAS. H. HILL spoke of a supra-pubic operation he made twenty years ago for the relief of a distended bladder and to remove a portion of a vertebrated catheter which had been left in the prostatic portion. The result was excellent.

DR. F. A. BLACKMER made some remarks in regard to the difficulty he had experienced in closing a perineal fistula after an operation of this nature.

DR. W. J. MAYO, in closing the discussion, said that his experience was limited to five cases, three perineal and two supra-pubic operations, but he was convinced that the supra-pubic was at least as easy and allowed a much better exploration of the bladder interior.

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THE TREATMENT OF DIPHTHERITIC LARYNGITIS.

PERRY H. MILLARD, M. D.

It is not my purpose, at this time, to invade the vast domain of acute infectious disease, but rather to direct your attention to a complication of diphtheria that is most frequent, and, in its manner of destroying life, very painful and distressing. No complication of diphtheria is as much feared by the attending physician as croupous laryngitis. The husky, dry cough, the anxious expression, the labored breathing, the dilated alæ and clammy skin is never forgotten by the parent or physician. It is one of the many phenomena of actual disease that constantly reminds us how little we can do in arresting the actual progress of disease.

It is not my province to dilate upon the etiology of diphtheria in the time allotted a paper in a session of this Society. That the deadly micrococci exist, we concede. Whether it be primarily a local affection, or the throat manifestation only a concomitant local phenomena, is a question not yet decided by the profession. That internal medication can do but very little in staying the progress of the disease, we all concede.

In pursuing a course of treatment, we should, in my opinion, conclude that the disease does not generally proceed from the accidental cess-pool or spontaneously, but rather from a specific germ, containing its own characteristic poison. In the treatment of this disease, however, we should keep the fauces as nearly aseptic as possible. We

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should give any drug believed to have a tendency to lessen the severity of the disease, and at all times keep before us the necessity of resorting to heart tonics when there is approaching heart failure.

I believe I echo the voice of the profession in asserting that bi-chloride of mercury and muriated tincture of iron are the drugs *par excellence* in controlling the disease.

The mercury treatment was first prominently brought before the profession by Prof. Pepper of Philadelphia, in an article read before the American Medical Association at the session held at Richmond, Va., in 1880. In this paper Prof. Pepper claims to have seen remarkably favorable results from the free administration of bi-chloride in croupous diphtheria, and that the patients exhibited a very pronounced tolerance of the drug. Notwithstanding, the paper did not receive the favor at the hands of the Society that was due this distinguished author. The drug has constantly gained ground in the estimation of the profession, and it is now one of the recognized remedies in the treatment of this most intractable disease.

My experience with the drug has been quite extensive and fairly satisfactory. I believe, however, that to furnish reliable data would require the comparative treatment of a large number of cases in the wards of a hospital during a single epidemic. Our experience with drugs in general practice offers us very unreliable data. When the plastic exudate of a diphtheritic croup becomes sufficiently alarming to endanger suffocation, it is our duty to immediately consider the propriety of some operative procedure. We should, at this time, impress upon the family the fact that in all cases of inflammatory stenosis the chances of recovery are greatly increased by early operative interference. Be it tracheotomy or intubation, the mortality will

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be governed to a considerable extent by the degree of carbonic poisioning present at the time of operation.

Up to a period of the last five years, the operation known as tracheotomy was the recognized and only procedure for the relief of diphtheritic croup. Time will not permit of my canvassing the merits and demerits of tracheotomy at this time. I consider it a quite formidable operation when properly performed; my experience is limited to thirteen operations, with three recoveries; I make a very free incision and divide three rings. The special indication is to keep or maintain a patent opening, which in my opinion, can be best accomplished without the use of a tube. If the neck of the child is very thick, the tissues can be retracted by adhesive straps. In the use of the ordinary round tube, the child is in constant danger of suffocation. The safest tube that I have seen or used is a form of tube used at Guy's Hospital, London. It is made of strong wire, and bent to adapt itself to the wound and trachea.

Within a period of the last five years, the operation known as intubation has been revived, and through the researches and experiments of O'Dwyer and Waxam, we are about ready to discard the scalpel and adopt an operation that is most unobjectionable and probably fully as efficacious in saving life as tracheotomy. In comparing the literature of intubation, I find it has steadily gained ground the last two years in America, and that it is not receiving the consideration at the hands of the profession in Europe that it is probably entitled to. Numerous papers have appeared, showing that many physicians have adopted this method. We can safely assert, at this time, that it has reached that point where it has become a recognized procedure. Many experiments are being made to improve the operation, but the O'Dwyer methods and instruments are

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not, as yet, improved upon. Dr. Rich, of London, has recently recommended naso-pharyngeal intubation by passing a catheter through nostril and nares into the larynx and retaining it in that position as long as is necessary for respiration. The operation is not a new one, neither is it looked upon with much favor by the profession.

In arriving at a conclusion as to what procedure to adopt, we should bear in mind that we are not justified in allowing a patient to suffocate under any circumstances. When the stenosis has, therefore, reached that point where an operation is necessary, we must elect which of the two operations we shall make. Considering the dangers of a tracheotomy and the necessary cicatrix remaining, as well as many unhappy complications we are liable to encounter, it is practically established that intubation is preferable to tracheotomy.

The operation of intubation is quickly and safely accomplished in experienced hands, but most difficult and dangerous of execution in careless or inexperienced hands. The mode of operation is quite obscure, as directed by most authorities.

My manner of intubing is quite easily performed, and different from the usual directions given. After gagging the patient, I pass the index finger of left hand down centre of tongue until I reach the epiglottis, making gentle pressure at this point. The epiglottis is looking forward, under the above circumstances. With the introducer, I insert the tube well into the post pharynx or upper œsophagus, and withdraw until I reach the end of the index finger and then gently elevate the introducer; the tube will readily glide into the larnyx at this point. The index finger, you will observe, acts as an important surgical andmark.

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By this method of intubation I believe the danger of injury to the parts is greatly lessened. It is quite as difficult to extract the tube as to insert it. It is reported, however, that Dr. O'Dwyer is perfecting a tube that is quite readily hooked out at the larynx with the finger. We should introduce a tube that is readily introduced and that fits comfortably in the larynx. If too large a tube is inserted, we may crowd a piece of membrane before the tube and thus endanger sudden suffocation.

Statistics thus far collected indicate that the mortality, thus far, has been less than in tracheotomies. The most reliable data that I have been able to obtain, are the recent statistics of Dr. Dillon Brown, of New York. They may be obtained in the May number of the American Journal of Medical Sciences. Dr. Brown submits a total of two hundred cases operated on by himself, of which twenty-seven per cent recovered. All but one of the cases were in consultation. He also appends a combined total of two thousand three hundred and sixty-eight cases, with six hundred and forty-seven recoveries, or 27.3 per cent. This shows how his own experience has furnished a very accurate representation of the efficacy of the procedure.

Dr. Brown furnishes several tabular charts of his own cases, showing the relative numbers and proportions of deaths from various causes; the percentages of recoveries according to the duration of pharyngeal symptoms before the operation became necessary; the percentages of recoveries according to similar duration of pharyngeal, or post nasal diphtheria; the percentages of recoveries for each month of the years 1885 to 1888. His results indicate that those cases are the most favorable in which the progress of the stenosis is slow; that cases in which the membrane is

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absent from the pharynx or posterior nares are rather more fatal than those in which the membrane is present; that the death rate is high in patients over eight years of age, because an unusually severe type of diphtheria is requisite to cause sufficient stenosis to need operative interference; and that variations in the results in different years are due, in part, to maturer experience in the latter years, but more so to variations in the tpye of the disease during the different winters. Of the last one hundred and fifty cases operated on by Dr. Brown, fifty were treated without bichloride of mercury, of which twenty-four per cent recovered, and sixty-five with it, of which 36.4 per cent recovered. These statistics convince Dr. Brown of the value of this drug in the treatment of diphtheria.

But very few of the profession of Minnesota have performed intubation. In a period covering the last thirty months Dr. Hunter has made fifty-five intubations, with eighteen recoveries, or 33⅓ per cent. In a period covering the last twenty-eight months Dr. E. J. Abbott has made thirty-four intubations, with ten recoveries, or 29.5 per cent.

Since February 1st, this year, I have made twelve intubations, with six recoveries, or 58.3 per cent. The intubations in my practice have all been in consultation, and, consequently, not seen sufficiently often to permit any reliable data. The youngest child intubated was six months old and lived two weeks, finally dying of exhaustion. All the cases operated upon were for diphtheritic croup.

I believe the principal reason of the large proportion of recoveries in my series of cases is mainly due to the fact that the diphtheria existing at the present time in St. Paul is of a very mild type. I have had no unfortunate complications in my series of cases. I have left the string attached

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to the tube in a few cases without any apparent irritation to the fauces. This was in cases that it was not convenient to see again.

The child I intubate before you to-day is simply to illustrate to those not having made the operation how simple the procedure is and the little shock attendant upon the operation.

DISCUSSION.

Dr. C. H. Hunter then opened the discussion on Dr. Millard's paper. His remarks showed that he favored the operation of intubation in preference to that of tracheotomy. He also said that he preferred Dr. O'Dwyer's method of intubation to that suggested by Dr. Millard. He mentioned some points of danger in practicing intubations, that of making a false passage and the pushing in front of the tube a portion of membrane. The danger of accident is greatest when the membrane forms at the same time in the larynx and pharynx. He cited a number of cases illustrating his statements. He spoke also of the matters of feeding. Patients will not refuse food sooner if wearing the tube than when it is removed. The difficulty in feeding is due to the œdematous condition of the parts. Intubation in the adult is more difficult than in children, because of the length of the jaw and the distance to the larynx. In such cases the mirror can be used and the intubation quite readily done. He strongly condemned the practice of intubation through the nose as practiced by the English. He thinks foreign practitioners do not give due credit to intubation. He thinks that stenosis after tracheotomy is liable to occur, but not so after intubation. He urged all physicians to fit themselves for it and to be in readiness to practice intubation when the proper case presents itself.

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Dr. E. J. Abbott spoke of thirty-four cases on which he had practiced intubation, of which ten made perfect recovery. Of the others, one had died after ten days of acute nephritis. Another child that died, he suspected from acute kidney trouble rather than from the immediate consequences of diphtheria. Dr. Abbott preferred the O'Dwyer method of introducing the tube to that suggested by Dr. Millard. As to feeding, he finds semi-solids better than liquids. There is danger of liquids filling the trachea. He cited a case in which it occurred. Intubation is not difficult or dangerous, not so much so as the use of the catheter or obstetric forceps. Danger of making a false passage is not great if due care is exercised. He recommended trying the practice on the dog first. He prefers the use of the gag, as he thinks there is some danger of being bitten. Of the tubes now in use he prefers the metal tube; does not like the rubber tube. He thinks best usually to remove the thread from the tube as it will cause some children to gag.

Dr. Hance spoke in favor of the operation of intubation.

Dr. Ohage spoke of the practice of intubation in Germany. He said that there they treat more in hospitals, and on that account tracheotomy is more successful. The success is due to the after-management and not to the simple operation itself. Rooms are prepared so that a constant spray is playing on the tube so that it cannot plug up. With their system of caring for such cases, they get a chance to operate early. Patients are compelled to go to the hospital when suffering from diphtheria. With tracheotomy there is a better chance to expectorate.

Dr. Talbot Jones spoke in favor of intubation. Parents will consent to it who will not consent to tracheotomy. He

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said that intubation comes in, in very young children and in very old people while tracheotomy is not advisable for them.

Dr. Thos. McDavit thinks the operation of intubation quite difficult when the larynx is diseased. Once in a while the trouble is very great. When the tube fits closely, the child may swallow all right. Once in a while the tube does not fit as well as it should, then there is more danger. Sometimes the membrane will slip in front of the tube; cyanosis will follow and the tube must be withdrawn at once. If septicemia has occurred the child will die. He would perform the intubation early.

Dr. W. J. Mayo said he preferred a small rather than too large a tube.

Dr. Millard then closed the discussion. He insists that practice will make the operation of intubation popular and practicable. He said he thought our American ideas are generally ahead of those of Germany. He mentioned the later pattern of the O'Dwyer tube as possessing some advantages over the former patterns, but the new tube, if swallowed, on account of the hook upon it, is somewhat dangerous. Dr. Millard said it must be done when there is stenosis of the trachea.

Dr. Baker asked if the membrane is expectorated through the tube. Dr. Millard said it is.

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OSTEOPLASTIC SURGERY OF THE FOOT.

JUSTUS OHAGE, M. D.

It is of but recent date that extensive resection, viz., extirpation of injured or diseased parts of the bony structures of the foot, has superseded amputation. Our ability to make such operations painless, bloodless and antiseptic has in no small measure contributed to that end. Another factor has been our making use of the facts discovered by Reverdin, Thiersch, Schede, Senn and others, that under certain conditions we can utilize foreign organic substances to supplant structures of our own body of which it has been deprived, and which to repair it has either not the necessary material or power. A certain amount of power of restitution is indigenous to all life, but this power is under certain conditions limited, and it is here where nature's powers fail, and where the surgeon ingeniously assists in a healing process, which without such aid would prove abortive.

The osteoplastic power of the periosteum is well known. It stands foremost in reconstructive healing, and yet we often find where large cavities of bone have to be filled that its force of reconstructing power gives out before that end has been obtained, the supply seems to become exhausted and the repair is incomplete.

It is on these occasions that the welding in of foreign substances which by experiments are proven to integrate with the material of reconstruction, either brings to a successful termination or greatly shortens the duration of a healing process otherwise abortive.

When Schede five years ago surprised the medical world by his announcement that an aseptic wound cavity filled by aseptic blood clot would heal kindly, and in this very process

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of healing make use of this clot as building material, it seemed to overthrow a fundamental rule of antiseptic teachings, which forbids the presence of blood in a so-called strictly aseptic wound, blood being one of the best culture-fluids for bacteria.

Experience has shown the correctness of Schede's statement, yet unless the procedure of organizing blood clot is carried out competently and absolutely antiseptically, great mischief may be done. We may establish an excellent nidus or breeding place for disease germs whose ravages will baffle our best endeavors. We thwart what we wish to promote. For this reason "blood clot healing" ought never to become property of the general practitioner, but must be reserved more to hospital surgeons, or at least to such who can insure antiseptic operating.

My cases in hospital practice were successful; those which I was compelled to operate upon in private houses, especially on the unavoidable carpet, were less so.

As an illustration to what extent conservative surgery may be carried if we make use of all means at our disposal, I shall briefly narrate the following case:

John Vitalis, a Swede boy, thirteen years of age, was sent to me for operation by Drs. Murdock and Umland of Taylors Falls, Minn., in 1889. He came to my office on crutches and gave me the following history: One year ago he felt a sudden pain in his left foot, in the direction of Chopart's joint while he was at work in the field. The foot began to swell gradually to about twice its natural size, the pain became very great, and after having tried patent medicines and different kinds of liniments for rheumatism, he was at last sent to reputable practitioners in his neighborhood, who only saw him occasionally, and finally directed him to me.

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On examination I found the foot greatly swollen, hard, very painful to the touch, shining, and the dorsal veins rather prominent, no fistulæ, no fluctuation. The swelling extended from the toes up to about two inches above the malleoli. The tumor seemed to be rather of a neoplastic than of an inflammatory character, yet circumstantial symptoms led me to diagnose caries of the arch of the foot.

I operated next morning at St. Josephs Hospital, assisted by Drs. Ritchie, Nelson and Spencer. The incision was begun at the head of the astragalus and carried downward and forward to opposite the base of the fifth metatarsal bone. A second incision was made from the starting point of the first and carried downwards and backwards to the calcaneus. The tendons of the peroneus longus and brevis were pulled upward and the arch of the foot thus exposed without damage to any important soft parts. All the bones were in a more or less extensive carious condition, wholly disintegrated and mushy. With the aid of saw, chisel, gauge and knife I removed completely the calcaneus, scaphoid, cuboid, the three cuneiform and a part of the astragalus, saving in all the periosteum and the ligamentous and tendonous attachments. The cavity was large enough to admit a fist; it was thoroughly curetted, washed out with a 1-1000 corr. subl. solution and tamponed with ten per cent iodoform gauze. No ligation of blood vessels was necessary as the course of the incision avoided them. The dressing consisted of sublimate gauze and Hagedorn's compressed moss paste.

There was no rise of temperature after the operation, and after five days I removed dressing and iodoform tampon and thoroughly irrigated the cavity again with a 1-1000 corr. subl. solution. Next I curretted the cavity with a Volkmann's sharp spoon to start up a fresh hemorrhage, and after the cavity was filled, closed the wound by interrupted car-

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bolized silk sutures, covered it with silk protective, and applied the usual antiseptic dressing. The process of healing was uninterrupted, only two dressings were required to complete it, the reconstruction of bone was in every way perfect, and ten weeks after the operation the boy was able to go to school only supported by a cane.

While this boy was under treatment a young girl of about the same age was sent to me for operation. In her case the disease had existed for over five years; there had several operations been performed to remove the diseased bones, but all had proved futile. Several fistulous openings existed, and the whole arch of the foot was in a disintegrated condition. The operation was performed by me the same way as the one above described, but in a private house, and in spite of the strictest antiseptic precautions sepsis occurred, and two months afterwards I was compelled to amputate above the malleoli. I admit that by the long duration of the disease her condition was not as favorable as that of the boy, yet it shows the drawbacks of a procedure which under favorable conditions is potent of so much good.

About a month ago I was called to Milwaukee to perform a secondary operation on a lady on whom I had operated one year previously for gallstones. While there, I was the guest of Prof. N. Senn, and he made me acquainted with his new method of bone-grafting. It consists in filling aseptic bone cavities with antiseptic, decalcified bone chips, sewing the periosteum and skin over it by different rows of sutures and intending healing by first intention. By going further into the details of this procedure I would anticipate the publications upon this subject soon to be made by this genial surgeon, but wish to say that I have operated after his plan, and though the case is yet under observation, I have all reason to be well satisfied with it.

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It is by a happy combination of these two methods, viz., the use of the blood clot and bone chip grafting that in future we may be able to conservatively treat bone injuries, especially in young subjects, which thus far have been condemned to amputation.

DISCUSSION.

DR. F. A. BLACKMER opened the discussion as follows:

I have long thought that far too many feet have been amputated in the past, and that the time is coming when amputations in the ankle will only be made as a very last resort. It has been demonstrated in practice that all artificial supports are unsatisfactory, and that any part of the foot or heel is valuable. I have had no experience with bone chips, or the transplantation of bone, and know nothing about it. Dr. Ohage's paper is especially valuable in calling attention to this subject, which is so full of great possibilities.

In this connection I will describe to you an operation which is applicable to some cases of injury or caries of the tibia, fibula, astragalus, and part of the os calcis, being a convex incision a little below the internal malleolus, extending across the dorsum of the foot to a point a little below the external malleolus; then begin another incision in the angle of the first incision, below the internal malleolus, extending across the dorsum of the foot to the angle of the former incision below the external malleolus, so as to include a piece, pointed at both ends, and about an inch wide in the center. Turn the foot backwards; saw off the ends of the tibia and fibula; remove the astragalus; saw off or chisel off, the calcaneum, or what remains of it, so that the tibia and fibula will fit it. Irrigate the parts with bi-chloride solution; stitch the wound together with deep catgut sutures. Now

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take a wide piece of adhesive plaster, and begin at the knee, passing down the side of the leg under the heel, and around to the opposite side of the knee. Over all place a plaster cast, leaving an opening for drainage. Fill the opening with sublimated cotton, and the operation is complete.

This operation can often be substituted for Pirogoff's, with the advantage of preserving the foot. The union, in the cases I have seen, seemed to be ligamentous; and considerable motion remained. If the heel is well elevated, very little lameness follows. So far as I know, this operation is original with me.

The deformity of the great toe where the bursæ, synovial membranes, etc., are so enlarged and deformed that the toe crowds under the other toes, is easily cured by removing enough of the head of the first metatarsal, so that the toe can assume its proper place, and then keeping it there by a plaster cast.

In several instances I have known the bone of the heel to be restored after its removal for caries, if most of the periosteum had been saved.

Dr. C. A. Wheaton spoke of the utilization of the blood clot in such cases, and cited a case of an operation performed by himself for talipes where he thought that the blood clot was utilized.

Dr. J. E. Moore said he favored conservative surgery, and thought that with diseases of the tarsus many cases can be saved that formerly were sacrificed. He said he thought many times surgeons are induced to amputate when it is better to operate in the ordinary orthopædic way. He showed some casts illustrating his idea.

Dr. W. J. Mayo spoke of Phelps operation which in his hands has proven excellent.

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COMMENTS AND CASES FROM SURGICAL PRACTICE OF 1888.

JAMES H. DUNN, M. D.

During the past year many interesting surgical cases have fallen under observation, but they have been so scattered over the broad field of external medicine that few deductions of value to the profession could be drawn from them. It is with the hope that a brief record of some of the queries which they have called to my mind, as well as a few of the more unique histories, may not be without interest to others, that this somewhat discursive paper is offered to the surgical section.

Amputations.

A question not easy of decision, yet of vital interest to most general practitioners and surgeons, has been forcibly brought to mind on several occasions, viz.: In injury or disease of the foot requiring amputation above the metatarsus, what point should be chosen, or recommended to the patient?

Between this point and the junction of the lower with the middle third of the tibia, the ingenuity of surgeons seems to have found its greatest scope in the rather barren field of technique in amputating. Chopart's, Hancock's, Malgaigne's, Pirigoff's and Syme's operations with numerous modifications certainly indicate much enthusiasm for conservatism, desire for originality or tendency to pedantry, perchance something of a mingling of these worthy, less worthy, and unworthy qualities.

If one look to text books for a decision, the stereotyped descriptions of these operations and little else is found. No

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good and sufficient reason appears why the subject of amputations in text books and lectures might not some day be so amplified as to elucidate some surgical principles, and let the well worn description of A to Z's operation rest for a time.

If one turn to his colleagues for advice, it is found that those who have once or twice made a Syme's, a Pirigoff's or a Chopart's, and may have never traced the case after recovery, are champions of these operations. Another class of men, generally those whose surgery consists largely in amputating, men it must be confessed who are not always recognized in the scientific world as surgical exquisites, yet men of affairs and judgment, will advise in all cases amputation at least above the malleoli, preferably at the junction of the lower with the middle third of the leg. Manufacturers of artificial limbs join with the latter, claiming a more serviceable and elegant limb can be adjusted, with less trouble and cost, and worn with greater comfort.

Amputations it appears are made with two objects in view. First to give the patient the best chances for his life. Second, to conduce to his subsequent comfort and usefulness. Indeed, amputation is not infrequently resorted to solely for the latter object. It is doubtless fully justifiable, and most intelligent patients prefer to assume some slight additional dangers to life, if thereby subsequent existence may be made more tolerable and useful.

But are amputations above the malleoli or at junction of lower and middle third more dangerous to life than the amputations through the part referred to? It has become a trite surgical axiom that every inch nearer the trunk increases the mortality of amputations. I do not wish to call in question the general truth of this principle, but is it unqualifiedly true at this date? In surgery many things once true are no longer true.

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Under the present methods of wound treatment there is no reason why amputation above the malleoli should be attended by a greater mortality than operations through the tarsus, and in my opinion the mortality may under some circumstances be less, viz., when the higher amputation permits of a cleaner operation. I regret that my mind is not as yet so far settled as to accept unqualifiedly either extreme, saving every inch or fraction of an inch of the foot or going boldly above the malleoli, but I have got well on the way towards the latter. I doubt if I ever again do a Chopart's or Pirigoff's amputation of my own free will, but I shall relinquish Syme's amputation with much reluctance, as it is a very attractive operation, yielding a stump of which the surgeon is usually proud, and which is certainly very useful to the patient if he is satisfied to wear an inelegant substitute for the missing member.

My experience with these amputations has been largely with operations for frozen feet, and I feel justified in drawing conclusions from these cases which might be too sweeping for universal application. During the past two winters I have met with several cases of frozen feet, and in the severer ones this perplexing question of where to amputate in the best interests of the patient, has arisen. Although the past winter was extremely mild, two cases presented with feet so badly frozen as to necessitate complete loss of both members, while one of the worst cases of the previous year was frozen early in October. The young and robust patient having donned a pair of tight boots, imbibed freely of the ardent, slept in a Dakota haystack when the mercury dropped temporarily some fifteen degrees below freezing, and received no humane treatment for two weeks subsequently. These facts with many others go to show that it is not usually so much the degree of cold which influences the extent of

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destruction as the efficiency or inefficiency of the immediate after treatment.

Most of our cases first came under treatment when gangrene was well marked, otherwise the usual precautions of gradual and cautious establishment of reaction was employed. In no case in which the thawing out and subsequent treatment was superintended by competent attendants were amputations necessary. Gangrene is more frequently due to want of proper care in this regard than to the extent of freezing. Our cases requiring amputation were injudiciously or not at all treated. The dermatitis in severe cases without gangrene were treated by iodoform or boracic acid ointment; gangrene having become unmistakable, the feet were irrigated with warm corrosive sublimate solution 1 to 1000, and then enveloped in sublimate gauze wrung out of hot water and covered with oil silk, this dressing being continued until the line of demarkation is fully established and amputation decided upon. The extent of gangrene varied in every conceivable degree from small areas of skin requiring no operation to complete death of all tissues above the ankle.

When the line of demarkation fell considerably anterior to the tarso-metatarsal articulation, or above the heel, the line of action was quite plain. In the former case the dead parts were usually cleared away and the bones removed with the forceps, or when not materially interfering with conservatism, flaps were cut just above the line and formal amputations through the metatarsus made. The latter plan of formal amputation usually sacrifices more bone, but frequently secures cleaner and more prompt healing, and especially as we advance above the toes, a better stump.

In the latter case of gangrene of the whole foot, amputation at the junction of the lower and middle third is clearly indicated. Between these extremes is where serious freezing

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seems most likely to draw the line. Just what amputation should be made in the true interests of the patient appears not to be as clearly defined as could be desired.

Independently of the general question of the desirability of stumps, two great objections appear to me to obtain to Chopart's and Pirigoff's operations and their various modifications in these cases.

1. The skin is always destroyed as far or farther than the deep parts, tending to a scrimping of flaps, which is prone to render these operations dangerous to the patient's future comfort and usefulness.

2. The attempt to operate in the closest proximity to gangrenous tissue greatly increases the dangers of infection.

Two years ago I saw a young man die of sepsis after a double Chopart who certainly might have escaped infection and probably recovered from a clean operation above the ankles. Had he recovered he would have gained the rather doubtful advantage of two partial feet, less useful and probably more troublesome than a pair of good artificial limbs. I concurred in the advice at the time, but would never recommend it again under similar circumstances. So far as I can learn from a prosthetic standpoint, it is really an advantage to the patient to have his feet off above the ankles in such a case. That being the case, outside of pure sentiment, it is simply a question of danger to life.

Now what dangers of amputation are increased by the distance between the tarso-metatarsal articulation and the lower third of the leg? Not hemorrhage, scarcely infection or tetanus; in fact this class of dangers are materially lessened since the amputation through sound and distant tissues enables the most rigid antisepsis possible. I can see no cause for a higher death rate excepting from shock, and I don't remem-

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ber to have seen a death from secondary amputation in the lower third in which shock played a material role.

So far as my brief experience goes I have no hesitation in saying that the double Chopart case above referred to would have almost certainly recovered from a double amputation above the malleoli done with rigid antisepsis. Hence under antiseptic precautions which may be better carried out by going some distance from gangrenous parts, particularly when due to freezing of the feet, since the sole is desperately hard to steralize, and gangrenous or inflamed areas exist quite generally above the line of amputation, I believe the chances of recovery are rather increased than diminished by the higher operation. Therefore I conclude that in amputations for frozen feet at least when it becomes necessary to advance beyond the metatarsus, it is advisable not to stop short of above the malleoli.

During 1888 I made twelve amputations of the lower extremity, five being double, with one death, as follows:

Amputation.	Cause.	Result.
1. Hip Joint,	Ostitis of the femur,	Recovery.
2. Thigh, upper third,	" " "	"
3. Thigh, lower third,	Ostitis of knee,	"
4. Thigh, lower third,	" "	"
5. Double, both legs 4 in. below knees	R. R. injury,	Death from shock.
6. Leg, lower third,	Ostitis of ankle,	Recovery.
7. Leg, lower third,	" "	"
8. Double Syme,	Frozen feet,	"
9. Double { Syme on right, lower third on left,	" "	"
10. Double { Pirigoff on left, lower third on right,	" "	"
11. Hey,	R. R. injury,	"
12. Double Hey,	Frozen feet,	"

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The Syme and Pirigoff are very fine stumps of the appearance of which I feel very proud. They will surely be very useful if the patients are doomed to stump about with primitive apparatus or none at all. But in case they attempt the best prosthesis of the day will they be as well satisfied with the Syme and Pirigoff as with the supra malleolar operation?

I regret to say that the experiment has not yet been tried as I had hoped; one patient has left the State, while the other two are yet after many months waiting for the city and a railroad company respectively to supply promised limbs. I cannot say therefore from actual observation which leg the patients will find the more satisfactory after prosthesis, the higher or the lower operation. But experienced manufacturers of such apparatus, and some experienced surgeons, inform me that the patients will wish both had been removed above the malleoli.

In past times from the expense and inefficiency of artificial limbs the station of the patient may have justly influenced surgeons in no slight measure in making amputations which yield stumps more or less useful without artificial limbs, but it seems to me that in this day and country, amputations should always be made with reference to the wearing of artificial limbs, since those unable to purchase such apparatus usually are and always should be supplied by town or city authorities as the most profitable and commendable of charities.

With two exceptions these eleven amputatioms recovered without suppuration worth mentioning. The hip case suppurated unexpectedly, and the acetabulum which at the time was believed to be healthy, became almost immediately the seat of recurrent ostitis. One of the leg amputations appeared to run a perfectly aseptic course and healed except-

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ing a small sinus under the first dressing which was removed eight days after the operation, but for the next three weeks a peculiar and unaccountable discharge persisted from this sinus. On searching for a cause a drainage tube which had been lost was discovered and removed, after which the wound promptly closed.

The third amputation mentioned was made under protest. It was the most superb case for resection of the knee that I have ever seen. The patient, a young man of twenty-eight with good family history and in good general health, had suffered from disease of the knee joint for six or seven years, having been treated in various hospitals for varying periods with alternating improvement and relapse. During the past few months it had been much worse, he suffered much pain, and the limb had become uselesss. All the prominent symptoms of the disease were now more rapidly developing, sudden pain during sleep, contracture, atrophy of muscles, grating on passive movements of the joint, but there were no sinuses, and the constitution had not markedly suffered. My two consultants advised amputation and the patient after explanation chose their advice. Examination of the joint by dissection showed the cartilages to be disorganized and the ends of the femur and tibia rough and exposed. There was about two teaspoonfuls of thick purulent debris within the joint. A very thin slice from each bone would have removed the disease. The patient slept well that night, sat up in bed for his dinner next day, began to flesh up almost immediately, expressing himself as more happy, comfortable and free from pain than he had been for five years past. There was no rise of temperature above 100 degrees, and healing was absolute *per priam*, without a trace of pus under our dressing, and this in an old and badly crowded hospital building in which were several cases of so-called idiopathic erysipelas.

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My disgust at what I regarded a needless sacrifice of this limb led me to err in the opposite direction and lose the only resection of the knee which I did during the year.

Jos. H., aged 26, sent me from Dakota with an ostitis of the knee, evidently tubercular and of about two years duration; was unable to give a concise family history, all his relations being in Germany. There were no sinuses, but the knee fluctuated and evidently contained considerable pus. The patient was much reduced from suffering and hectic. After a few days of rest and tonic treatment he was placed in St. Mary's Hospital and a resection made. The joint was thoroughly disorganized, a piece about three-fourths of an inch in thickness was sawed from each bone and a few diseased points not thus reached removed with the curette. They were secured with heavy silver wire, antiseptic dressing and plaster cast. The bones appeared healthy but I remarked to Dr. Burton, who kindly assisted me, that they cut as if remarkably soft. Patient did pretty well for two weeks, after which he slowly sank of osteo-myelitis, dying eight weeks after the operation.

The condition was recognized some weeks before death, but at no time did amputation seem advisable, on account of his general condition. Both tibia and femur were found infiltrated with pus and softened throughout the greater part of their length.

This case should have been amputated. The other should have been resected. Moral: Old surgeons should not reject resections of the knee *in toto*. Young surgeons with heads full of antiseptic treatment should not forget that there are things not dreamed of in antiseptic philosophy.

Tarsectomy.

—— aged —— entered city hospital. She had an extreme congenital talipes equino-varus of the right foot, the left

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being comparatively normal. Several toes and fingers were congenitally rudimentary and defective. There was a large callus on the external aspect of the foot over the cuboid and head of the fifth metatarsal upon which the patient walked. The underlying bursa had some two months previously inflamed, suppurated and left a sinus at the bottom of which denuded bone could be felt. As operation appeared necessary to remove the diseased bone, it was decided to extend the operation and excise sufficient to allow of the restoration of the proper contour of the foot. An ample incision having been made upon the outer border of the foot, a wedge shaped piece of the tarsus, the base consisting of the head of the fifth metatarsus, and all the cuboid bone, the apex striking the internal border of the arch near the proximal end of the internal cuneiform, was cut smoothly out with a sharp chisel. The foot was now brought into a quite normal position, the tendo-achillis divided subcutaneously, a bone drain inserted, catgut ligatures and sutures applied. As there was some oozing of blood a temporary splint was applied over the antiseptic dressings for twenty-four hours. At this time it was redressed, irrigated with corrosive sublimate solution, and plaster cast placed over the fresh antiseptic dressing. It received no further attention for four weeks, there having been no febrile symptoms. At this time dressings were removed. Union was complete, drain and sutures having been absorbed. The remaining deformity was slight, and some eight weeks later patient left the hospital with a useful and but slightly deformed foot.

In certain cases of club foot in adults, in which any operation is advisable, tarsectomy it appears to me is much preferable to amputation, and of the various methods it is believed that wedge shaped excision has the advantage of simplicity, ease of performance and best results.

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Fractures.

Out of a considerable number of fractures of much diversity, particularly multiple fractures, the following observations seemed noteworthy:

Cases 1 and 2.—One ununited fracture each of the jaw and clavicle, both in young male adults. I know nothing of their treatment; they are mentioned only on account of the rarity of non-union in these bones. There was loose ligamentous union in each instance.

Case 3.—An autopsy was made upon the remains of a patient 60 years of age, who died apparently of septicæmia three weeks after simple fracture of the humerus, junction of middle with lower third, while rising in bed from muscular contraction. Although the fracture was simple and subject to no violence whatever, there was a large collection of pus, fully half a pint, about the fragments. There was no union, but considerable callus was thrown out. This case proves that subcutaneous wounds *may* suppurate in debilitated subjects. The case is unique in my experience.

Case 4.—A young Swede, aged 24, fell through an elevator, fracturing both bones of the right arm, supposed to have fractured left orbital plate of the sphenoid, with instant and permanent loss of sight in that eye. Both bones of the left leg were twice broken, reducing each bone to three somewhat equal parts; one fragment pierced the skin, rendering it compound. The leg was dressed antiseptically and placed between sand bags until in condition to be put up in a plaster splint some two weeks later. The result was good with the exception that the lower tibial fracture failed to unite, hence the brace action of this bone was largely lost and its want much felt unless the patient exercised great care in placing the foot squarely on the ground.

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Case 5.—John Anderson, aged 22, fell from a building, sustaining a fracture of the thigh, upper and middle third; also both bones of the leg upon the same side about its middle. The leg was dressed in plaster and Willson's long splint adjusted over this to the thigh, the only case in which I have found this splint satisfactory in fractured thigh, since any adequate extension is unendurable upon the foot as usually applied. After this experience I have found this splint advantageous for applying handy extension to the thigh in private practice by first applying a plaster cast to the foot. In this case the thigh united promptly, but union was delayed for eleven weeks in the leg. The result was ultimately very perfect in both.

Cases 6, 7 and 8.—Except as a result of direct violence I have not until recently met with fracture of the fibula without dislocating a portion of the tibia. The first case seen about a year ago, was that of a lawyer who, while intoxicated, got out of a carriage to walk to his house, fell and was carried home. I examined him a few minutes later and decided that the ankle was simply sprained, but some four days later it was found that the fibula was unquestionably fractured about three inches above the ankle; that joint was clearly sprained, but there was no evidence of it having been dislocated. Since then I have met with two similar cases in neither of which was there a history of direct violence. It appears that the internal lateral ligament allowed such a turning of the foot without rupture as to snap the fibula.

Cases 9 and 10.—Of several fractures of the jaw, two were of special interest. The first in a middle-aged man suffering from fractures of the thigh, clavicle and ribs, who sustained also a comminuted fracture of the jaw anterior to the angle on one side and just past the symphyses on the other. Dr. J. H.

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Martindale kindly applied an interdental splint of vulcanized rubber from an impression in wax. In three weeks it was removed with a very perfect result.

The second was a fracture of the right ramus, wholly above the angle, the result of a blow from the fist during an assault. At first it appeared impossible to secure apposition of the fragments, as the upper short fragment was drawn upwards and inwards. Wiring was thought of, but it was finally decided to risk binding the lower to the upper jaw by means of the usual four-tailed chin piece of felt, soaked in salicylate of soda. In four weeks union was complete without deformity. Patient was a youth of 20, with perfectly sound teeth.

Case 11.—A phenomenal fracture of the skull was the following: A. B., a middle-aged man, was picked up on the street wholly insensible. Dr. Vanderhorck, in passing, noticed that the pupils did not respond to light, and informed the police that the man was suffering fron dangerous injury to the head. Another surgeon later diagnosed intoxication, as the patient's breath was heavily laden with the article, which his surgeon recognized more skillfully than cerebral hemorrhage. Not sobering up at the station he was sent to the city hospital where he soon died.

At the post-mortem examination a large contusion was noted over the left half of the occipital bone rather below and considerably behind the ear. The most painstaking investigation could detect no abrasion or mark upon the skin. A similar but less extensive contusion occurred over the right eye, also without the slightest abrasion. On cutting through the scalp these contusions were found to consist of an infiltration of the connective tissues with blood and serum. On removing the calvarium an immense clot of blood occupied the fossæ of the cerebellum and cerebrum of

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the left occipital region, between the dura and the skull, and corresponding to the location of the external contusion behind the ear. On removing the dura the under lateral and upper surfaces of the right anterior lobe of the brain were covered with a large thin clot, evidently the result of hemorrhage from the brain surface, an area some 2½ inches in diameter of which was rough and disorganized in a phenomenal manner, appearing as if it had been very skillfully rubbed with a nutmeg grater. There was no fracture or injury of the skull over this area which corresponded to the contusion over the right eye, but the orbital plate of the sphenoid of this side was found to be shattered into several pieces without displacement. On removing the brain a fissure was found running from the left side of the foramen magnum upwards, backwards and inwards 1½ inches through the occipital bone. It was a straight, even fissure through both tables of the bone and nothing more. The large clot in this region came from branches of the posterior meningeal.

The man had evidently received two blows with some instrument which without leaving abrasions upon the skin, produced these unique and wonderful injuries to the cranium and its contents. It has never been demonstrated how these blows were dealt. The possibility of such blows leaving no trace upon the skin, the peculiar disorganization of the surface of the cerebrum on the right side without injury to the superimposed skull, the shattering of the orbital plate without lesion of the surrounding arch of bones, are quite remarkable, and worthy of remembrance in the study of injuries to the head, as well as from a medico-legal standpoint.

An operation for a deformity from fracture.

Case 12.—Last March a young man from Litchfield who had sustained a fracture of both bones a little below the

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middle, applied to me for relief from a slight deformity resulting from the injury. On examination it appeared that the fracture had been extremely oblique but simple. Union was strong but the sharp point of the upper fragment of the tibia consisting of a splinter of the crest had slipped past the lower fragment so as to present a bayonet-pointed elevated projection under the skin. This deformity annoyed the patient, produced pain, and the integrity of the skin appeared to be jeopardized by the pressure of this sharp point. Time would doubtless considerably round off the projection, but in view of the irritation and dangers of ulceration of the skin, I advised chiseling away the offending point. Under ether, the limb being most carefully disinfected, and under antiseptic precautions the skin was split a little external to the projection, the periosteum peeled back and an inch of the upper fragment was cut away obliquely from above downwards almost completely relieving the deformity. The periosteum was drawn together with catgut, the skin with silk sutures. Union occurred without suppuration.

I have now done this operation, which I have not elsewhere seen or heard mentioned; in both instances it appears to have been very satisfactory to the patients, and may perhaps be advisable in a few extreme instances such as the above.

Dislocations.

Three dislocations of the shoulder and one of the hip came under observation which were to me a series of surprises. One shoulder dislocation in an elderly lady had been overlooked for a week. It was recognized by Dr. Bell, who found the head of the bone in the axilla with the usual symptoms of that dislocation. The doctor etherized the patient, and I grasped the arm, elevated it, and was

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beginning to make slight extension preparatory to the first manipulation, when the head went in with an audible snap. The accidental ease so to speak with which it was reduced was very surprising.

Case 2. A German mason aged 58 years, received an injury by heavy timbers falling upon him, just how was never learned. He was brought to the city hospital. Several fractured ribs and broken clavicle were diagnosed on the left side with the most extensive emphysema I have ever seen, the whole trunk and neck being puffed up round and crepitating. The left pleural cavity was almost completely filled with air. The dislocation, forwards under the clavicle, which as above stated was also fractured, was in consequence of the other injuries and extensive emphysema, overlooked until the seventh day after the injury.

The patient had a mitral regurgitant murmur, and the pulse was markedly irregular, but ether was given, and we proceeded with the utmost assurance to reduce by manipulation, to my astonishment with no avail. I then tried the heel in the axilla and all other means known to me, but with no avail. Several prominent colleagues were summoned and they tried manipulation and force until it was thought unsafe to further prolong the operation.

After a few days he was again etherized and many colleagues tried until they gave it up. In view of the patient's age, bad condition of heart and other injuries, it was thought unsafe to further attempt reduction, particularly as all the facts being explained to the patient he requested that it be left alone. He left the hospital some weeks later with it unreduced, but not painful, and excepting inability to raise the elbow more than 45 degrees from the body, with a very useful limb.

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Case 3 was reduced by manipulation without occurrence of note.

Case 4. The hip dislocation was seen several times with Dr. Chase of the city hospital. A powerful middle aged Swedish laborer six weeks before coming under observation, had while bending over as in shoveling received a heavy blow upon the buttocks and back, dislocating his right hip. He had received no treatment. I believe the original dislocation was upon the dorsum ilii. Three prolonged attempts were made by all known methods, and by at least a half dozen prominent surgeons. The head passed in all conceivable positions about the acetabulum, but every attempt to bring it into place was unavailing. This case of course is not surprising in view of the length of time which elapsed before attempts at reduction.

Strangulated Hernia.

Five cases of strangulated hernia, three femoral, two inguinal, were met with. One femoral in the person of an old German lady of 78, refused operation from a combination of rare ignorance and a belief that she was old enough to die. Her case is interesting only in that she lived eleven days after vomiting and obstruction began.

Case 2.—Mrs. Kelly, aged 35, mother of several children, two months pregnant, had been vomiting almost constantly for eight days. She had been treated for pernicious vomiting of pregnancy, and abortion at last advised. I was called to confirm this advice, and found a small femoral hernia about the size of a pullet's egg. With the assistance of Drs. Cates, Burton and Pratt, the sack was opened and found to contain a tablespoonful of serum and a very small knuckle of intestine yet healthy. The constriction was

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relieved, knuckle reduced, sack tied off and cut away, borders of the ring stitched with catgut and the skin with silk. Vomiting ceased; recovery prompt. She has since been delivered of the child at full term, and thus far the hernia has not relapsed.

Case 3.—Mrs. C., aged 46, femoral hernia somewhat larger than the last. Operation on second day of strangulation; much the same condition found and precisely the same treatment applied. Recovery was prompt; *permanency* unknown, as patient has not been seen since leaving the hospital some three weeks later.

Case 4.—H. H., aged 39, oblique inguinal hernia of many years standing, about the size of the fist; operated twenty-four hours after strangulation; sack ligated, cut away, pillars freshened and stitched with catgut, superficial sutures of silk. Under observation eight weeks, no relapse at that time; not seen since.

Case 5.—T. G., aged 78, had a large oblique ingunial hernia which had existed the greater part of his life. It had been strangulated on previous occasions and reduced by manipulation. On one occasion five or six years ago, it had been reduced after much difficulty, the sack having first been aspirated by his surgeons.

May 19, evening, it became strangulated, and Mr. G. tried several times to reduce it himself as he had previously succeeded in doing. After his attempts it became very sore to the touch, painful and stercoraceous vomiting occurred.

On the 20th, at 2 P. M., he called Dr. Kistler, who found it too tender to admit of taxis and summoned Dr. Salisbury and myself. Consent and arrangements for the operation were not secured until 11 P. M., about thirty hours after strangulation. Operation was undertaken so soon after

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strangulation that gangrene of the intestine was not suspected.

Our room and light were ill adapted to operation, but with the assistance of Drs. Kistler, Salisbury, Woodling and Hall the sack was cut down upon. It was found greatly thickened and intimately adherent to its coverings. A strong odor was already apparent. On opening the sack a quantity of dark offensive fluid escaped, when 1½ inches of small intestine came to view, which was already black and mortified. The question now arose what shall be done? Resection of the bowel, if best in any event, which I hardly think established, was out of the question in our case. A small unhandy room, poor light, the very aged and exhausted patient still hiccoughing, could not possibly survive resection. Therefore the constriction was relieved, the intestine drawn out until sound gut entered the wound, to which both ends were stitched. Antiseptic gauze was packed about the protruding gut, and a large piece of protective with a slit cut to admit the loop drawn over it. The loop was now incised and contents evacuated. The patient lived four days, seeming somewhat relieved for two days, but finally succumbed to exhaustion.

Thus ended the first fatal case of herniotomy in my experience either as operator or assistant, not less than sixteen in all, and yet interference was about the most prompt of any of the cases. The damage was probably done by the patient himself in his attempts at reduction on the previous night. It emphasizes the dangers of delay and destructiveness of taxis unless followed in case of failure by prompt operation.

In mentioning strangulated hernia I wish to insist upon three principles.

The first I believe is generally admitted, but perhaps not quite always followed at the present time, viz.: In all cases

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where possible the operation for strangulation should be supplemented by an attempt at radical cure. Strangulated cases are the ones which offer much the best prospects of radical cure.

Second—Active symptoms of strangulation having once set in, taxis should be wholly done away with, and herniotomy always resorted to, since the dangers of a skillful operation are almost *nil*, the chances of a permanent cure of a dangerous hernia are good, while many unseen and apparent dangers lurk about reduction by taxis, such as recurrence of strangulation, as in case five, reduction *en masse* with strangulation unrelieved, injury to the intestine, and so forth.

I would move, Mr. Chairman, that taxis, that Greek word absurdly and pedantically used to signify "the acts of gentle pressure with the hands by which hernias are reduced," as applied to genuine cases of strangulation, be stricken from the medical lexicon or be restricted to the reduction of non-strangulated hernias or to these and such incipient cases as leave a doubt of strangulation in the surgeon's mind. As applied to well-marked strangulated hernia, taxis is a relic of the days when surgeons feared the peritoneal cavity. I believe that we should now teach the surgeon that a success in reducing a strangulated hernia by taxis is a dubious victory for both surgeon and patient.

Third—As to the course to be pursued in case of gangrene of the gut, that depends much upon the individual case. In general the establishment of an artificial anus seems most practicable.

During the year I have done no operations for the radical cure of reducible hernia. I am not enthusiastic enough to recommend the operation in any case in which the hernia can be replaced and well retained with a truss. I distrust the operation not so much from its dangers as from the tendency

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to relapse when no truss is worn. I look with some skepticism upon the reports of successes which certainly present the most favorable aspect of the case to say the least.

The Surgery of Malignant Disease.

For some time I have observed with amazement the apparently growing inclination of practitioners to recommend operations in nearly all cases of malignant disease. I scarcely remember to have seen a case however desperate but some one had been found rash enough to advise radical operation. In some cases operation would have been stupid if not criminal.

The surgery of malignant disease perhaps more than any other branch of the art lays great demands upon the judgment, honesty and humanity of the operator. The dignity of the individual and of the profession it seems to me has suffered from ignorance or more reprehensible causes in our ranks high and low. In my intercourse with the profession it has appeared to me that comparatively few keep clearly before their minds the objects of surgical interference in malignant disease. It is really shocking to observe how prevalent is the argument, "well the patient will eventually die anyway," to justify an objectless operation.

Surgical interferance in malignant disease may have one or more of three objects: 1. Radical cure. 2. Prolongation of life. 3. Reduction of suffering.

The first object is admittedly achieved but rarely, and is only to be thought of in the more favorable varieties of disease and locations, and when early and free excision is practicable. But a small percentage of the operations for malignant growths can reasonably be expected to prevent recurrence. More frequently is the second indication attained, but it is chiefly the second combined with the third

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objects that render most justifiable operations in cancer laudable. In certain localities operations are certainly justifiable when they offer prospects of relief from suffering even though no prospect of prolonging life can be entertained.

Many cases of cancer of the uterus have come under my observation, and indeed mostly cases far advanced. In such instances I have found the plan of Prof. Nussbaum of Munich the most useful in prolonging the life and comfort of these sufferers. Some years ago I had the pleasure of watching Prof. Nussbaum's treatment, and have followed it always I think with benefit. Such patients suffer mostly and come to premature death chiefly from hemorrhage and septic infection, causes which combine to produce the so-called cancerous cachexia. Hence such advanced cases of the disease are best treated by curetting out all the diseased tissue possible and applying the actual cautery freely. This removes all septic matter which is poisoning the system, and the resulting cicitrization effectually checks hemorrhage, and presents a considerable barrier to the progress of the growth. The cachectic appearance disappears, health is restored for a longer or shorter interval. After some months when symptoms again appear, the operation is repeated, until no longer feasible, or until death results from secondary deposits in internal organs. The operation is coupled with little or no immediate danger, and on the average prolongs life longer than such desperate operations as hysterectomy.

There are doubtless some cases of carcinoma of the cervix recognized so early that amputation is advisable, but several cases came under my observation in which this operation had been done with little or no benefit, not nearly as much as usually results from curetting and actual cautery. If any

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attempt at radical operation was justifiable, it should evidently have been a vaginal hysterectomy.

Then it appears to me that amputation of the cervix is applicable to but few cases of uterine cancer, those early recognized cases in which the disease is clearly limited to the cervix. A few more favorable cases with no involvement of the glands or adjacent organs may be treated by vaginal hysterectomy, but the class of cases above referred to are best treated by curette and cautery.

Four cases of cancer of the rectum were seen and operation refused in all, on account of the extent or situation of the disease. Resection of the rectum for cancer is not an inviting operation unless cases are carefully selected; but few really good cases present. In general the operation is soon followed by relapse, and if extensive is very dangerous to life, while the after comfort of the patient is in general not greatly enhanced.

If pain and obstruction call for interference, it seems to me colotomy with such palliative measures as curetting and incision of the sphincter are more rational in many cases than resection. I saw a case in consultation with Dr. Burton in which resection of the rectum had been made some two months previously. It had been found impossible to keep the lower part of the rectum patent, and Dr. Burton performed a very successful left lumbar colotomy for the resulting stenosis. The patient lived some four months afterwards, much relieved, and died suddenly of pneumonia.

Exploratory Laparotomy.

Case 1.—Edward A., aged 15, was examined by me May 16th. His family history was good and he had enjoyed excellent health until five months previously, when he began

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to suffer from attacks of pain in the bowels and vomiting. These attacks occurred irregularly every two or three weeks, the pain being described as sharp, cutting and colicky, and relieved after vomiting occurred. The bowels have been fairly regular throughout the course of the disease to the present date. His physicians during the first eight weeks of the trouble regarded it as a stomach disorder. At this time, however, they discovered a tumor in the hypogastric region and the boy began to look sallow and cachectic. During the following three months the hypogastric tumor increased rapidly, pain became more constant, cachexia more marked, emaciation, loss of appetite and sleep were progressive.

May 16, about five months after the beginning of the trouble, I examined the boy with Drs. Salisbury, Hall and others. He was thin in flesh, very anemic and extremely nervous, having slept little for a week, and took little nourishment. In the hypogastric region just above the pubes and very centrally located as regards the mesial line was a mass apparently the size of a child's head, reaching from the pubes to umbilicus and bulging the anterior abdominal wall forwards. It was quite hard, apparently quite regular in outline, tender on rough handling. It was believed to be unconnected with the abdominal wall and malignant in nature. At first it was thought to be a sarcoma of the abdominal wall, but after careful examination no satisfactory diagnosis could be arrived at, and exploratory incision for the purpose of diagnosis advised. As there had been no obstruction to the bowels at any time it was believed that it could not be a growth of the intestine itself.

May 19, with the assistance of Drs. Salisbury, Burton, Hall, Murray and others, the abdomen was opened. To

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our utter astonishment the chief bulk of the mass consisted of the lower part of the ileum and the head of the colon, which were displaced to the middle line of the body and increased in size by a more or less regular infiltration evidently malignant, to the size of two fists. That there was a free passage through the mass was shown by invagination of the gut from above upon the finger. The mesentery and many coils of small intestines in the hypogastric region were also infiltrated and their walls increased to a great thickness. These infiltrated loops of intestines, mesentery and glands, massed together, nearly filled the pelvis and formed the large tumor as described from without the abdomen. The parts involved were about eight inches of the ileum, the head of the colon, several of the dependent coils of the jejunum, the sigmoid flexure, mesentery and meso-colon, and mesenteric glands.

Yet a medical man of great experience appeared to think we showed the white feather in closing the abdomen; one of the many confirmations to my mind that the *object* of operation in malignant disease is frequently forgotten by operators. It was said the boy would die anyway and the parents would feel better were it taken *out*, even if the boy should at once perish. Removal of the disease would have been absolutely without object and a disgrace to the man who did it.

The wound healed well without more fever than the patient had been having the few days which he spent before the operation under our observation, viz., 101°, occasionally in the afternoon. The boy now, some four and a half weeks after the exploration, is about much as before, excepting more weak and anemic. The proper classification of this growth is of course a matter of speculation,

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as none was removed, but no doubt could be entertained of its malignancy.

Case 2—Was that of J. M., aged 58, who had been suffering from progressive emaciation, pains in abdomen, which was retracted, constipation, vomiting, wind in the bowels, visible irregular peristaltic action of intestines, with audible rumbling and croaking, for a year past. At last chronic obstruction became more and more marked until no passage could be secured and vomiting threatened life by starvation. At this juncture exploratory incision was made with a forlorn hope of finding an obstruction which might be overcome for temporary relief. Very diffuse white nodular infiltration of the peritoneum and intestines was found, with several constricted parts of the gut. The extent of the disease rendered operation out of the question. Wound was closed; condition of patient neither better nor worse. Wound healed, but patient perished of inanition seven days later.

This case presents a most marked contrast to Case 1, in age, course, symptoms and conditions found. Exploration was less justifiable than in Case 1, and was undertaken only with a slight hope of giving temporary relief to obstruction, while in the other instance, the disease being apparently circumscribed, it was thought possible to be a removable growth. In neither case did exploration injure the patient. Exploration had an object; any further interference would have been senseless and reprehensible.

Tumor of the Spine.

Miss B., aged 17, was first seen by me June 8. She gave a good family history eliciting nothing bearing upon her case. Health was excellent until about nine months ago, when she began to experience pain shooting down the lower limbs, and

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felt a small lump to the left side of the spinous processes in the upper lumbar region. In the course of the next three months the pains increased, the limbs became weak, and at last was wholly unable to move her lower limbs. When I first saw her she had been completely paralyzed below the seat of the growth for six months, bladder and rectum were involved. She was much wasted and had many bad bed sores. She had been treated for spinal caries with a plaster jacket until she could no longer endure the apparatus.

On examination, absolute loss of motion and nearly complete loss of sensation existed below the growth. On the left side of the spinous processes of the last dorsal and two upper vertebræ was a hard round mass larger than a goose egg. A smaller mass lay to the right of the spinous processes. It was deep-seated, below fascia and muscles, and its nature could only be inferred. It was believed to be a solid growth springing from the spinal column, which by pressure had caused the paralysis. The prospects from operation appeared very meagre, but as the nature and origin of the growth could not be well made out without exploration, operation was advised as offering a very slight prospect of relief.

January 13, with the valuable assistance of Drs. Fairbairn, Burton and W. A. Jones, an incision about five inches long over the spinous processes was made, muscle and fascia turned aside and the growth on either side of the spines readily enucleated. It appeared to spring from the lamina and spinous process of the first lumbar vertebra which were chiseled away and removed with the growth.

Its gross appearance and history would indicate sarcoma, but I regret to say that accident destroyed the tumors before microscopical examination was possible. After the operation sensation improved very much in the limbs, and the

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paralysis of the rectum was and has remained much improved, but motion never returned in the least in the legs.

The wound healed readily and the condition of patient was some better for about eight weeks, when the growth began to return in the same locality. She still lives, growth increasing in the spinal region, completely paraplegic, and much afflicted with deep and extensive bed sores, which cannot apparently be healed, and evidently due more to interference with trophic nerve supply than to pressure or want of attention.

Large Leioma of Sacral Region.

Case 2.—A large tumor of the sacral region removed from Mrs. McI., aged 25, is in the hands of the Section of Pathology, together with a photograph of the case. It was first noticed five years ago and grew slowly for three years. During the past two years it had increased rapidly and given rise to severe sciatica of the left limb from pressure upon the great sciatic nerve at its exit from the pelvis. On first sight this tumor was thought to be a teratoma which might have been overlooked by the patient while small, and only began to increase at 20 years of age. Closer inspection showed it to consist of a solid irregular, but apparently clearly incapsulated growth with numerous cysts of considerable size.

Its removal was accompanied with considerable hemorrhage and profound shock. It was very intimately attached to the sacrum from which it was separated by chiseling away some of that bone.

Dr. Stewart, chairman of the Section of Pathology, finds what I had not anticipated, that the growth is a leiomyoma with cystic degeneration.

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Ovariotomy.

Of four laparotomies for various diseases I desire to briefly mention the following cases:

Case 12.—Miss Josie R., aged 23, has menstruated regularly since her fifteenth year. Noticed abdominal enlargement one and one-half years ago, which increased slowly until the last three months, since which it has grown rapidly. She has lost flesh and presents the peculiar facies ovariana. The abdomen is about the size of a woman at full term. When lying on the back the umbilicus is projecting and the flanks, especially the right, is tympanitic. The uterus lies behind the growth.

Assisted by Drs. Fairburn, Burton, Salisbury and Hall, the abdomen was opened by a two inch incision and one large and several small cysts found springing from left ovary, with no adhesion. They were emptied of about twelve quarts of chocolate-colored fluid, the sack removed through the small incision, the pedicle ligated in two parts and returned to abdomen. The pedicle was slender and contained many large varicose veins. Almost at once a hematocele larger than the fist formed behind the peritoneum in the region of the pedicle. In examining this it ruptured and blood rushed into the cavity in considerable quantity. The accident was caused either by dragging upon the tumor or by the ligature cutting through the veins. There was no question in my mind of its having slipped. What bid fair to be an operation of a few minutes was thus extended to an hour and a half, but after much difficulty hemorrhage was controlled by stitching and ligating and the cavity washed out.

For twelve days the case could not have done better. On the second day temperature was 100¾°, after which it

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remained below 100 until the twelfth day. Patient felt excellent, bowels regular after third day, appetite and spirits good, said she felt like getting up. On the seventh day stitches were removed and the wound was perfectly healed. No trace of pus. On the fourth day she had severe epistaxis which finally ceased. On the twelfth she began to menstruate and continued for four days. On the twelfth the morning temperature was 100°, afternoon 101°. On the thirteenth temperature ranged the same. Tongue coated, throat sore and appeared red and injected. On the fourteenth, temperature ranged the same, appetite and good spirits gone, tongue very foul, some pain in left hip. Fifteenth day, afternoon, temperature 103°. Sixteenth, morning temperature 102°, p. m. 104°.

I had been watching the case closely to discover the cause of this unfavorable temperature. On examining the abdomen closely it appeared that there was a little prominence and hardness under the line of incision but no heat, redness or tenderness. Suspecting an abscess in the anterior abdominal wall, the lower part of the incision was opened with knife and blunt dissector and a considerable collection of pus discovered, deep down next the peritoneum. The temperature now gradually subsided until on the twentieth day it reached normal, and has since remained so, and patient rapidly recovered.

I had several times had some suppuration of the external wound without the least apparent detriment to the patient, but this, coming on so late after such apparent perfect healing by first intention that it was unexpected, and the resulting temperature caused considerable uneasiness.

Some have been inclined to discourage antiseptic wound treatment because some of the best results in abdominal surgery have been achieved by men who regard antiseptic

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surgery as more or less of a humbug. This reasoning is most fallacious.

In dealing with a laparotomy and an amputation of the thigh the conditions and tissues with which we have to deal are as different as bone and brain substance. The principles of antisepsis are all right, the trouble is with the want of understanding in the observer.

The peritoneum is characterized by three qualities in a wonderful degree: (1) Rapid repair, commencing almost instantaneously, often reasonably complete in a few hours. (2) The power to rapidly throw out barriers to the entrance of pus or other irritations from without. (3) The power to deal with certain limited amounts of offensive matter introduced within it.

The tissue is intolerant of antiseptic washing. The abdominal wound is a mere bagatelle, of little consequence whether it suppurate or not, so that the slight discharge have a free exit. In abdominal surgery all depends upon a cleanliness which avoids immediate direct infection of the cavity, perfect technique and a mastery of the knowledge of the peritoneum and its methods of repair. The question is simply to do the work right and leave the cavity clean; in a few hours it can take care of itself so far as infection is concerned.

It is quite otherwise with an amputated thigh. A large wound exists through a great variety of tissues of varying vitality. These possess none of the three qualities of the peritoneum in a marked degree as compared with that tissue. Asepsis must be sustained for a very long time. A few comparatively inoffensive germs may have time to initiate mischief before the more phlegmatic tissues can dispose of them, and it is exceedingly difficult to prevent infection for days in succession. The tissues are tolerant of much irri-

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gation with disinfectants. Here antisepsis, in all its details, is the chiefest element in success; there cleanliness or asepsis and special understanding of the technique, physiology and pathology of the peritoneum.

The following history of Case 11 is given, as the tubes and ovaries are in the Pathological Section:

Mrs. J. J. M., aged 29, began to menstruate at 15, and remembers no trouble until about the time of her marriage seven years ago. She thinks that the last two menstruations before marriage were painful and she became much worse soon after that event. During these seven years she has suffered much from painful menstruation, alternately better and worse, and although well nourished has been more or less of an invalid and sufferer all the time. Has had several attacks of localized peritonitis and suffers from pain in the back and regions of both ovaries, particularly the left. She has been sterile, total absence of sexual desire, copulation very painful.

She applied to me last fall, partially for relief of suffering and partly for relief of sterility. A tumor the size of a small orange was found in the left pelvic region, lying external and anterior to the uterus. It was exceedingly tender, felt firm and elastic and was believed to be a solid growth of the ovary. Laparotomy was advised, and April 26, with the aid of Drs. Burton and Hall, the abdomen was explored. For some time the left ovary and tube could not be found, but at length it was discovered that the apparently smooth floor of the pelvis was but a false floor, the result of inflammatory exudate and adhesion. After tearing up the adhesions, a tumor the size of an orange, the ovary and a greatly hypertrophied and abnormal fallopian tube were enucleated. The right fallopian tube was found in the same condition. They were enlarged to the size of loops of the

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small intestine from which during the operation the eye could frequently not distinguish them. Their walls were immensely thickened by cellular infiltration, the fimbriæ bound down by adhesions, and they contained a small amount of sero-purulent fluid.

Barring some suppuration about the stitches in the abdomen, the patient made an excellent recovery without fever above 100 deg. The tumor was found to be a cyst, its precise origin I have not been able to make out, but the ovary and the tube both entered into its walls. The specimen, together with several microscopic slides prepared by Dr. J. H. Stewart, are in the Pathological Section. It is probably the result of a very chronic salpyngitis with cyst formation.

Stone and Cystitis in the Female.

In removing stone or draining the bladder of the female in chronic cystitis, I have had some confirmation of the advantages in certain cases of urethral dilatation over incision of the vesico-vaginal wall.

I had done the latter operation several times with advantage when with Dr. Newhall. A lady was thus operated who had for seven years suffered from cystitis, stone formation and encrustation of the mucous coat with phosphatic deposit. There was reason to believe that there was stone formation in the kidneys and those organs in an incompetent condition. After establishing a vesico-vaginal fistula and washing out the bladder, the patient was for a time relieved so far as pain was concerned, but a hectic condition with slight fever in the afternoon supervened, and she rapidly sank. The operation is not without its dangers and annoyances.

Soon after, I was called by Dr. Jones, of Gaylord, to operate a case of stone in a young woman. The urethra was

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dilated to the size of the index finger, when it was found that the two uric acid stones were larger than had been calculated, being a full inch in the smallest diameter. The urethra was dilated sufficiently to remove them with forceps. She made an excellent and complete recovery, with no difficulty in controlling the urine.

Emboldened on the one hand by the success of what is regarded as a rather hazardous over-dilatation in this case, and made cautious by the last vesico-vaginal fistula in the previous one, I have resorted to urethral dilatation in some cases of chronic cystitis, and am inclined to regard it as being in many cases the better operation of the two. 1. It is coupled with no dangers to life. 2. It requires no subsequent operation for closing. Its only drawback is that the paralysis is often of short duration, and may require repetition a second or third time. Its only danger is permanent incontinence, which when the operation is done with sufficient care, gentleness and not carried beyond the size of the index finger, is I think sufficiently demonstrated by Simon and others to be perfectly safe.

Stricture of the Urethra.

Much has of late been said of the wonderful results of electrolysis in the treatment of stricture. During the year I have carefully tried this method in several cases and have been unable to find any essential advantages from the electric current. True, some strictures may thus be gradually dilated, but not more than may be achieved with the bulbs without the current. It is an excellent method for humbugging and victimizing patients with no stricture, or with those forms of stricture which most readily yield to the simplest dilatation. It has been proven so valueless from a scientific standpoint, and so valuable for quackery, that

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I believe the method should be rejected by regular practitioners.

A careful study of the subject and considerable practical experience leads me to believe that for most strictures one of the safest, most convenient and most serviceable methods of treatment is by gradual or rapid dilatation.

In the pendulous portion internal urethrotomy after Otis' methods in skilled hands, gives the most permanent and promptest results, with but slight dangers.

In the deep urethra any stricture which may not be treated by dilatation, should in my opinion be subjected to external perineal urethrotomy. Three such operations were made during the year, with prompt recovery without urinary fever. A fourth external perineal section without a guide, performed in the city hospital upon a patient who had had complete retention for four days, and had had his bladder tapped and aspirated in three or four different towns, died in a few hours, probably from a combination of causes. He had a temperature of 104° at the time of operation, and the perineum was rendered anatomically unrecognizable by injury and extravasation of blood from many futile attempts to pass the catheter by various surgeons into whose hands he had fallen on his travels as a tramp.

In one case combined external and internal urethrotomy was resorted to in multiple strictures of membranous and penile portions, after the method of Reginald Harrison, a course which cannot be too strongly advocated in cases in which, perineal urethrotomy being indicated, other strictures exist too far forwards to be brought within the exterior incision.

Relative to impotence and other bad results after incising the meatus, during the past few years I have had occa-

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sion for various reasons to perform meotomy a good many times. In but one case has any difficulty whatever resulted, real or assumed. This was in the person of a brother practitioner who had read accounts of alleged impotence following the operation. After the operation he informed me that his sexual powers were much impaired. I was very confident at the time that this was a mere coincidence due to other causes. Such a temporary impotence is by no means rare after gonorrhœa and other urethral troubles. My friend now enjoys his pristine vigor and his meatus has not been restored.

Useless slitting of the meatus is senseless and reprehensible, but when necessary is, in my opinion, without the slightest dangers, to the *potentia coeundi* or otherwise; and its repair is one of those comical medical fads which spring from brains more bent upon originality than common sense.

DISCUSSION.

DR. DUNSMOOR made remarks upon the selection of the point for amputations about the ankle joint. He thinks proper to preserve the integument of the heel when it can be done. Patients will walk on the heel. He thinks the chances for sepsis is the same in one locality as another if the same care is taken. He thinks artificial limbs are borne better on the knee than when too low down on the limb. So far as the strangulated hernia is concerned he would have removed all of the mortified gut.

DR. C. A. WHEATON said the best method as stated by Bryant is the saving of as much tissue as possible. Would chance too little tissue for Chopart's operation rather than go too far up the limb. Would not amputate above the ankle when he could avoid it.

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Dr. J. E. Moore said he agreed most essentially with Dr. Dunn. His experience with Chopart's operation has been most unfortunate. Pirogoff's operation is good, but difficult to obtain good results. In the matter of radical cure for hernia he does not agree with Dr. Dunn.

Dr. Salisbury said he would not condemn electrolysis in the treatment of stricture of the urethra. He cited cases and said he now relies upon electrolysis.

Dr. W. J. Mayo said he had seen amputations near the knee to relieve difficulties arising from lower amputations. He also spoke of the ether spray to reduce hernia. He said that McBirney's operation is *the* operation for the radical cure for hernia.

Dr. Dunn closed the discussion, fully adhering to the premises of his paper. He thinks the importance of artificial limbs of today must modify our ideas as to amputations. As to the death rate he asked the gentlemen to show that it is higher in amputations above the malleolus than in those lower down the limb, as intimated by one of the speakers. When a higher amputation can secure better antisepsis it is conservative surgery. So far as the slough in the case of hernia, he left the intestine to keep the fæces from the wound.

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A CASE OF EMPYEMA FOLLOWING PLEURO-PNEUMONIA—PLEUROTOMY—RECOVERY.

E. Y. CHILTON, M. D.

July 4th, 1888, I was called to see C. L., aged 27. West Virginian by birth, laborer, single, pauper. Family and personal history, so far as could be obtained, good. Temperature 105°, pulse 130, respiration 36, urine albuminous. Three months previous had had pleuro-pneumonia. Having night sweats and diarrhœa; very much emaciated and poorly nourished.

Upon examination I found right side of chest bulging, front part of chest from clavicle to one inch below right nipple emphysematous, a small wound only large enough to admit the point of an ordinary silver probe, situated on a level with the eighth rib and midway between axillary line and nipple, and from which when patient would cough there would be a slight oozing of pus. This wound, I was informed was made by a farmer with an ordinary penknife, with the view of letting out the pus and saving the town paying a doctor's bill.

Diagnosis, Empyema. The operation of pleurotomy was offered as the only hope, which was consented to. The patient on the next day was brought into the village a distance of five miles, in a spring wagon, and given comfortable and clean quarters, a bath and a complete change of clothing, for his personal condition was filthy in the extreme. He was given quinine and all the good nourishment he could take.

From the fifth to the ninth inclusive, his morning temperature was 101°, evening temperature 103°. Tenth, A. M., temperature 100°, pulse 120, respiration 36.

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After etherization by Dr. A. M. Davis, who very kindly and ably assisted in the operation, with the patient in the recumbent position inclined to diseased side, I made an incision two inches long in the seventh intercostal space in the axillary line, evacuating 64 oz. of very offensive pus, after which the pleural cavity was washed out with one quart of a solution of hyd. bi-chloride, 1 in 4000, in an ordinary fountain syringe. A double drainage tube, consisting of a portion of a No. 12 Nelaton catheter, folded upon itself, was introduced and held in position by means of a silk ligature passed through the tube and then fastened to the chest wall by means of adhesive plaster. The edges of the wound were dusted with powdered iodoform and an antiseptic dressing consisting of absorbent cotton, twelve layers of carbolized gauze, all covered with oiled silk and held in position by a roller bandage extending from axilla to umbilicus; one-fourth grain morphia sulph. given and patient put to bed.

Eleventh, A. M., temperature 97°, pulse 84, respiration 30; P. M., temperature 97°, pulse 96; slept well, but very much exhausted. Twelfth to thirteenth, inclusive, A. M., temperature 97°, pulse 96, slept well and takes sufficient nourishment. Thirteenth, P. M., temperature 98°, pulse 96; vomited at two o'clock, the result of too much nourishment. Fourteenth, A. M. and P. M., temperature 97°, pulse 96, bowels constipated, discharge gradually decreasing, appetite good. Fifteenth, A. M. and P. M., temperature normal, pulse 96, albumen disappeared from urine, free discharge of pus, emphysema in the chest wall gradually disappearing, had acute pleuritic pains through the night. From this on the temperature continued normal, and pulse never went above 108.

On the eighteenth the patient sat up in bed long enough to write two letters; discharge gradually decreasing.

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Twenty-first, felt faint for the first time when washing out pleural cavity.

The antiseptic wash was used up to August 19th, when all discharge of pus had ceased; the drainage tube was removed. August 26th external wound closed and healed up entirely. The roller bandage is still applied.

The pleural cavity was washed out and the antiseptic dressing changed daily until July 20th, after that time the washing and change of dressing was attended to every other day, or every second, third or fourth day, as the case seemed to demand, to insure cleanliness and thorough disinfection.

After August 26th the patient was allowed to take out-door exercise daily. He gradually improved in flesh and strength, and on the first of October returned to his home in West Virginia. During the winter he wrote me that he was still improving and feeling better daily.

When I first visited the patient the case looked almost hopeless. The trouble had been pronounced (by a quack) quick consumption, and the patient given only one week to live. Satisfied that I was correct in my diagnosis, there was left but one course to pursue, and that was pleurotomy. It is laid down as a general rule that a purulent effusion demands free incision and thorough drainage just like any other abscess. Acting upon this I decided to operate at once.

The element of most importance in the treatment of these cases is undoubtedly free drainage, and the thorough washing out of the pleural cavity with an antiseptic wash, thereby freeing the cavity of retained secretions undergoing decomposition.

In this case I used the bi-chloride of mercury, 1 in 4000, as stated, until pus ceased to flow. After this had been used for one week patient complained of the gums being a little

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sore; the bi-chloride was then left off for two or three days, and warm water only used, (which had been boiled and filtered) until soreness of gums passed away, the use of the bi-chloride was again resumed, and no further evidence of ptyalism was noticed throughout the entire treatment.

I look upon the bi-chloride of mercury as being the antiseptic par excellence in the treatment of such cases. There is no doubt but what the antiseptic method of treatment in these cases is more successful than that formerly employed, and the more minutely we enter into antiseptic details the greater will we be rewarded in our operations.

The drainage tube used was a No. 12 elastic catheter folded upon itself, the free extremities projecting one-half inch into the pleural cavity, the loop externally, and small strips of antiseptic gauze passed within the loop, thereby affording better disinfection to the wound and discharge, and preventing the tubes from projecting too far into the pleural cavity; this kept the wound thoroughly open and admitted of free drainage all the time.

Various methods have been used for drainage; all have their advantages and disadvantages, but the principal point is to have free drainage with the least amount of irritation possible.

The cavity was washed out by attaching an elastic catheter to a fountain syringe, then passing catheter into the pleural cavity. There never was any obstruction and the liquid injected would always flow out freely with the pus and detritus.

Authorities differ considerably as to the proper point to open the chest. Fraentzel advises a position between the axillary line and mammary line, and just above the sixth rib. Bowditch preferred a point low down in the back so that the most dependent portion of the chest cavity will be opened.

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Marshall prefers the fifth space on the right side, and as near the weak point under the nipple as possible. Douglas Powell prefers a lower puncture, in the seventh or eighth space in the posterior axillary line.

I selected the point through which nature was making an effort to get rid of the pus, for there was a fistulous opening extending from puncture made by the farmer with penknife, up to the seventh intercostal space in the axillary line. There are objections to the opening being made too far back, and I do not know of any definite rule that has been made, or can be laid down as to the point of puncture.

An exsection of a portion of rib, as suggested by Roser in 1865, was not thought necessary in this case, as the ribs were not closely approximated and the index finger could very readily be passed into the pleural cavity. No measurements of the chest were made, but there was a general retraction of the right side of the chest. The right pectoral muscle is less prominent than the left, and the right shoulder droops. There were no indications of amyloid disease.

This being my first case I desire to put it on record, hoping, if nothing more, that it will show the importance of thorough drainage and antiseptics in such cases.

DISCUSSION.

Dr. K. Hoegh said it is best to remember the location of the internal organs, the venæ cavæ, particularly the inferior. Displacement of it gives rise to embolism. We must remove any displacement as soon as possible. If the contents of the pleural cavity is serous, remove by aspiration, but do not remove all of it at once as you by so doing endanger inflammation. When puriform the danger of ulceration is very great. Pus expectoration from pleural cavity is dangerous.

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If it penetrates the diaphragm it is exceedingly disastrous. We must give pus a free outlet, the exact method is immaterial.

COLOTOMY.

C. A. WHEATON, M. D.

During the past year I have twice had occasion to do colotomy.

In the first case the colon was opened in the right loin, after the method of Bryant. The left half of the abdomen was filled by an osteo-sarcoma, which had sprung from the left sacro iliac synchondrosis and compressed completely the descending colon and sigmoid flexure, which, of course, made the right side, of necessity, the point of election. The abdomen was moderately tympanitic, but the patient was so much emaciated that I anticipated but little trouble in reaching the gut in the loin, provided a long meso-colon were not encountered, which would seriously embarrass the operator and prolong the operation. After a patient search I failed to find the colon and was obliged to open the abdominal cavity and hook the gut out with my finger, when it was secured to the skin margins in the usual manner. The death of this patient, within a few hours, afforded an opportunity to examine the cavity and to demonstrate the meso-colon, which gave rise to the difficulty.

Case 2.—A left inguinal (Littre's operation) colotomy was made because of the anatomical make-up of the individual; she was short, stout, and the interspace between

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the last rib and the ilium was narrow and very deep. She had a large epithelioma high up in the rectum, which involved about two-thirds the circumference of the gut, and which was so extensive as to preclude the possibility of a prostatectomy. The incision in this case was about two inches in length, parallel with Poupart's ligament, at its outer one-third, and about half an inch above it. The sigmoid flexure was easily found and was immediately engaged in the wound. I now modified the operation of Littre by transfixing the mesentery at its intestinal border with a heavy catgut suture, which was carried through each side of the wound in the abdominal parietes, from the peritoneum outward, and which, when drawn taut, secured a perfect diaphragm or spur between the proximal and distal ends of the gut. The intestinal and parietal margins of peritoneum were now approximated and held in apposition by interrupted gut sutures, thus shutting off entirely the abdominal cavity. The operation was completed by opening the gut transversely and stitching it to the skin margin of the wound.

This patient had an uneventful convalescence and was discharged from the hospital in two weeks. The bowels, after the first thirty-six hours, moved two or three times a day. A properly fitted pad controlled the opening, and her evacuations were practically voluntary and comfortable.

I am convinced from my experience with this case, and with others I have seen, that this method of forming a barrier between the upper and lower intestinal segments should be adopted in all colotomies, whether inguinal or lumbar. In the older operations fecal matter often passed the artificial anus, and when the obstruction below was not complete, the old suffering was re-established, and, when it was complete, rectal tenesmus was the result, and

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an anti-peristaltic action produced regurgitation toward the proximal portion of the tube. Madelung's modification consisted in making a complete section of the intestine, and closure of the lower portion and suture of the upper end in the wound.

It seems to me that the only forcible argument against the inguinal operation is the peritoneal injury. It is much easier of execution, the wound is more favorably placed for the patient's comfort, access is gained to the abdominal cavity for digital examination, where that is desirable, and if the antiseptic details of the operation have been perfect, the opening of the cavity has not added to the gravity of the case.

In the lumbar operation, the difficulty of finding the gut when collapsed and empty; the mistaking of bulging peritoneum for bowel and opening it; a very fat loin and narrow interspace between rib and ilium; the not uncommon presence of a meso-colon, which adds greatly to the difficulty of procedure; abnormal position of the ascending or descending colon. Mr. Lockwood (British Medical Journal, vol. II, page 574), explains the abnormalities of the large intestine by the fact that during its development it is very mobile, the cæcum occupying first the umbilical, then the left, next the right hypochondrium, and finally, the right iliac region, abnormalities following its arrest at any part of its course. We know also, from Mr. Curling, that the descending colon, in a small proportion of cases, crosses the spine to the right side to enter the pelvis.

DISCUSSION.

Dr. A. F. Ritchie opened the discussion of Dr. Wheaton's paper. He would prefer the anterior rather than the

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posterior surface for colotomy. The sigmoid operation is not always easy, the meso-colon allows so great latitude of motion to the colon that difficulty is many times experienced in securing it. He thinks it difficult sometimes to ascertain which is the upper and which the lower bowel. He agrees essentially with Dr. Wheaton.

DR. W. J. MAYO said the right lumbar colotomy is very difficult, and cited cases. He would prefer the inguinal operation.

ABSCESS OF THE LIVER.

J. W. MACDONALD, M. D.

The amount of work before this section of the Society urges me to cut down my paper to very small dimensions. I shall therefore confine myself to a brief account of two cases, one of which illustrates the eccentric course which an abscess of the liver may take, and another to show the good results following operative interference, even in a young child.

J. B. was at his birth a well nourished, healthy boy. In his seventh month he became fretful, feverish, and suffered from what was supposed to be colic.

I saw him in consultation with Dr. Sutherland about the twelfth day of the child's illness. There was slight jaundice, the face was pinched and expressive of suffering, the temperature was high, stools were reported as natural and there was but little disturbance of the stomach. The jaundiced condition pointed to the liver as the seat of the

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disease. Percussion yielded little information, but on pressing firmly over the right lobe the child screamed as if in violent pain.

During the two following days the symptoms became more marked, a decided fulness and bulging over the right lobe and particularly at a spot corresponding to the angle of the tenth rib, made me feel confident that we had to deal with an abscess of the liver. The little patient's strength was rapidly failing and it was evident that unless matters changed speedily, he must soon sink. Having first put him under chloroform, an incision was made through the skin at the point of greatest bulging and a small trocar pushed in for about an inch, when it was felt to enter a cavity. About four ounces of pus were drawn off, the cavity was well washed out with very dilute carbolic acid, the canula kept in position and a dressing of carbolic gauze applied.

The operation was followed by speedy and marked improvement of all the symptoms. Pus discharged freely for several days, and the admixture with bile left no doubt that the substance of the liver was the seat of the abscess. I cannot, in any medical journal, find the record of a similar operation in so young a patient. At the time of the operation he was only eight months of age. The progress toward recovery was uninterrupted and the child is now a healthy boy in his sixth summer.

B. R., 10, a vigorous, active boy, had always enjoyed good health. Nov. 3, 1885, he was seized with a chill, high fever and slight delirium. For several days I watched his symptoms looking for evidence of typhoid fever, which was then prevalent. He had no dysentery and there was no malaria where he lived. Three weeks after his first illness he one day expectorated a large quantity of pus, after

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which he experienced great relief and from that time gained in strength.

On December first he was going about and improving daily, when on exposure a chill came on and his old symptoms returned. There was still no jaundice but there was tenderness on pressure over the right lobe of the liver. On the twelfth day of his second illness he passed in his stools a large quantity of pus and it was evident that either a second hepatic abscess or a re-accumulation of the former one had opened into the intestine.

For a time all went well once more, he gained in strength rapidly and I had given up attending him, when I was called to see him on account of a relapse of his former symptoms. The course of this, his third attack, was almost identical with the previous ones, but ended in this case by a discharge of pus in his urine, showing that the abscess had discharged through the kidney or ureter.

From this attack he speedily recovered and regained flesh and robust health.

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AMPUTATION BELOW THE KNEE FOR OSTEITIS RESULTING FROM ERYSIPELAS.

MARY S. WHETSTONE, M. D.

Miss S., American, age 14. Except diseases common to childhood has always been perfectly healthy until Nov. 1, 1885, when walking felt a sticking pain from ball of heel to about six inches above the ankle.

January 16, 1886, she took a long cold ride into the country. Next day had a sore throat until noon, when it disappeared. Afterwards began to have darting pains through the body, which continued for three days, when it focussed in the right leg, midway between foot and knee. About the same time mother observed a purplish redness on the chin and cheek which disappeared in about an hour, to reappear in different parts of the body during several days.

On the fifth day after the ride, redness and swelling appeared on the outer side of right leg about six inches above the malleolus. This increased rapidly and extended to the toes and waist. Pain excessive and constant.

In two weeks a large abscess had formed, which was lanced three times in ten days, discharging large quantities of pus, from sinuses and anterior and inner aspect of tibia.

From this time to the following day it was an extremely painful profuse suppurating abscess. In the meantime, patient had become weak and emaciated.

At this time Dr. Elliott of this city operated for removal of diseased bone. About two and one-half inches of necrosed bone was removed from the tibia. The pain ceased but the discharge of pus continued. In September this became very foul, more profuse.

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December 9th patient presented herself at the Northwestern Hospital for women and children for treatment. The right ankle and foot were swollen and œdematous. About six inches above the ankle joint on outer aspect of the tibia was an irregular opening and several smaller ones. Exploration with the probe came in contact with diseased bone. Patient was anemic; nutrition fair.

Drs. Kimball, Hunter and A. S. Whetstone saw the patient with me. We decided to put the patient under an anæsthetic and make an exploratory incision, and be prepared to amputate if necessary.

December 31st, 1886, assisted by Drs. H. H. Kimball, A. S. Whetstone and Elizabeth Norred, an exploratory incision was made. We found the tibia diseased to lower end and extending upward to within five inches below the knee joint.

We deliberated about ablating the diseased portion of the bone instead of amputating. The friends were consulted, and in view of the long confinement it would necessitate under the most favorable circumstances, and that the patient came to have the leg amputated because she was tired of the previous long confinement, they chose amputation. Accordingly it was removed about three inches below the knee.

An examination of a longitudinal section of the severed member afterwards showed that we had pursued the best course. The shaft was diseased to the epiphysis below, separated from the joint only by the cartilage. The disease extended upwards to five inches below the knee. From this point was found a sinus passing transversly to the fibula, thence downwards parallel between the two bones, among the vessels and nerves to the depth of eight inches. The fibula was also diseased.

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The patient recovered from the effects of the operation without any unfavorable symptoms. During the first twenty-four hours there was some venous hemorrhage and the temperature rose to 103.2°. After the second day it did not rise above the fever point. The stump healed nicely.

Patient was discharged March 3. She has been wearing an artificial leg for nearly two years. Scarcely any deformity is observed. Health very good.

TRAUMATIC INJURY TO THE SKULL, FOLLOWED BY INSANITY WITH DELUSIONS OF PERSECUTION. OPERATION—TREPHINING—RECOVERY.

J. H. JAMES, M. D.

B. T., age 33 years, received an injury to his head in 1868 by the falling of a heavy tackle block which struck him about the center of the left parietal bone, that according to his story produced a running sore that was a long time in healing and discharged some pieces of bone.

During the year 1879 he became much depressed and had fears that his friends would be injured in some way. After a time these fears in a measure disappeared, but in the fall of 1882 this condition became again quite marked and soon assumed a more active character, supplemented by great depression of spirits, with delusions of persecution, and fears of being arrested, and he armed himself for self-defense against his supposed enemies.

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He was brought to the hospital in December, 1882, for an operation to remove the depressed bone at the seat of the injury, being at the time exceedingly timid and emotional. The depression over the seat of the injury was found to be one and one-half inches long by three-quarters wide, with its long axis antero-posteriorly. The patient was etherized and a button of bone removed with the trephine overlapping the depressed portion, which was found to be increased in thickness to over one-half inch. Owing to the feeble action of the heart at this juncture, the surgeon did not deem it prudent to proceed further, and the wound in scalp was closed and healed kindly in a few days. The operation was followed by marked improvement in the mental condition of patient, there being less emotional manifestations, but some degree of mental depression continued.

In the following June he again returned to have the remaining portion of the depressed bone removed, at which time he presented an improved physical as well as mental condition. A second operation was performed removing the remainder of depressed bone, and on June 28th he left the hospital happy, with no trace of his former delusion, and remains well up to the present time.

This is the only operation of the kind, I believe, that has been performed in this hospital.

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GYNÆCOLOGY.

PHILO E. JONES, M. D., CHAIRMAN.

THE ETHICS OF REST AS APPLIED TO THE PREVENTION AND RELIEF OF UTERINE DISORDERS.

PHILO E. JONES, M. D.

Ladies and Gentlemen:—In these days of operative gynæcology, it has occurred to me that it would be acceptable, if for no other reason than for variety, to call your attention to a remedy which, for its application, requires neither scissors, sutures nor sponges, is always aseptic and has entire freedom from the much dreaded bacteria.

As a remedial measure in the treatment of diseases of the female generative organs, rest has held a variable value with practitioners. Doubtless some have exaggerated its importance, while others regard it as a minor matter. Probably the majority of physicians to-day do not give it that attention which it deserves, and consequently do not seek from it those benefits which its judicious employment would most certainly afford.

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The failures to derive benefit in uterine therapeutics from rest may be attributed to its having been advised in unsuitable cases, or to not associating with it other important therapeutic measures.

Another important reason for its neglect will be found in the inability or unwillingness to obey its requirements. Family cares and responsibilities and the claims and attractions of society often negative the better judgment of the physician.

However accounting for the, as I believe, undeserved neglect into which this therapeutic measure has fallen, a brief study of it—what it is, how it may prove beneficial and the cases to which it is adapted—are the points to which I would direct attention.

Rest may be divided into general, mechanical and physiological.

Upon the application of the first division it is not my purpose to dwell at this time.

In all acute inflammatory affections of the uterus and its associated organs and tissues, the importance of perfect rest is so obvious that it is hardly necessary to more than make mention of it.

Pain, as Parvin says, "the faithful warder of life's castle, warns of danger and compels the security which arises from repose, and repose in such position that the inflamed part shall be least subject to pressure or motion from contiguous parts."

This author also very justly remarks that there are cases met with, not exclusively in the subjects of uterine affections, though relatively to the entire number often in such, where the local ailment may not require rest, may not, indeed, forbid exercise, but where the general enfeeblement

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of the constitution, the little vital power, may require the one and forbid the other.

Such patients are often urged by injudicious friends, sometimes possibly by physicians, to exercise, and when they make the effort it brings weariness and exhaustion, with nervousness, pain and insomnia.

Nutrition has been so impaired, the life forces are so low, that with the increased demand for power to be expended in locomotion or other exertion the entire organism is thrown into disorder.

The duration of rest and also whether it should be continuous or intermittent, will depend entirely upon the patient's general condition and the nature of the local ailment.

Mechanical rest is generally effected by means of pessaries and the so-called utero-abdominal supporters. These latter cannot be, under ordinary circumstances, supporters of the womb. No apparatus applied to the abdominal walls can in any measure sustain the uterus, unless this organ is greatly enlarged and its fundus tilted forward so that it rests upon those walls. They may be of use, however, where the abdomen is pendulous from an accumulation of fat, from relaxation of its walls consequent upon repeated pregnancies, or from dropsical accumulations, and in certain organic diseases of the womb or ovaries attended with great enlargement; also where we wish to rest a tender uterus by lifting up and pressing back toward the spinal column the abdominal viscera that will otherwise lie upon its sensitive fundus.

In the consideration of pessaries and their uses, I have but a few observations to make. By a pessary we usually endeavor to restore to its normal position, or at least to retain there, a displaced uterus.

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But this is not all; a pessary is but a provisional contrivance; it rests a disturbed uterus; it rests its appropriate means of support — ligaments and connective tissue — so that these may recover tone, strength, contraction and condensation.

In three of the positional disorders of the womb, viz., prolapse, (not procidentia,) retroversion and retroflexion, I believe no pessary is equal to that of Hodge or some one of its modifications. While by no means adopting the creed of Hodge or Graily Hewett, nor on the other hand ranging myself with the anti-pessarians, I do believe that most pessaries might be regarded as rude plugs, preventing by their greater size the escape of descending wombs.

Dr. Hodge's pessary is founded upon a principle which commends itself by its simplicity and clearness; and where practitioners are disappointed with it, it may be that either the shape and size of the instrument are not carefully selected as to the needs of a particular case, or the case is not in a condition to wear any pessary.

A pessary should, as a rule, be worn without the patient's being conscious of its presence, save by the alleviation of her sufferings, by the rest it gives her.

In approaching the third, and in my judgment, by far the most important division of my subject, physiological rest, it is with much trepidation and an overwhelming sense of my lack of acceptable language in which to portray the more delicate features of this subject. Said the Calif Omar, "two things cometh not back, the sped arrow and the spoken word." I shall endeavor so to speak as not to offend.

Physiological rest, in the treatment of many of the diseases of women, deserves much more attention, in one regard at least, at the hands of physicians than it has yet received. We accomplish it in some cases by medical

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measures, in others by surgical, and in still others by moral agencies, by counsel and by direct command.

When vesical tenesmus wearies a patient laboring under cystitis, we wash out irritating urine and purulent secretions from the bladder, and throw in an anodyne solution, by these means giving the bladder rest; when a dysmenorrhea with spasmodic uterine pains occurs, we give opium or other pain relieving drug, and thus seek to give the excited organ rest.

In our own day, Emmet has shown that in those cases of cystitis in the female resisting all other methods of treatment are quite amenable to the rest cure. In such patients he makes an artificial vesico-vaginal fistula, and gives the bladder rest.

As Sir Henry Thompson has observed, in the case of the male, "to the distressed bladder is given a holiday." After a few months the organ becomes healthy, and then the fistula is closed.

We are to be edified with a paper upon this very interesting subject by one of our fellows at this meeting.

In a vaginismus dependent upon vulval fissure or ulcer, the spasmodic condition of the sphincter may be removed by putting the ulcer or fissure at rest by appropriate medical or surgical treatment.

Very often the minor abrasions existing upon the posterior lip of the uterus may be readily cured by rest.

This rest being secured by collodion or nitrate of silver lightly applied to their surface; or what is still better, by curing the uterine catarrh, whose irritating properties perpetuates, and in many cases produce them.

Many other examples might be given of the importance of physiological rest, but I wish now to speak of it in another respect—one in which from the delicacy of the subject it is too often neglected—in fact, I am led to believe

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that neither inquiries nor injunctions are made by the medical attendant. Had I the graceful pen of a Goodell or a Parvin, the task I have set would be far less difficult.

Rest from sexual congress is sometimes imperatively demanded for the cure of a patient laboring under a uterine disease. It cannot have escaped the observation of many practitioners present, that some of their married female patients, whose treatment at home failed to establish a cure, readily recovered after a more or less prolonged absence; similar recoveries too, you must have observed now and again as a sequence of widowhood. The disturbing element at home in the one case, and during the lifetime of the husband in the other, was coition, and I might add, excessive coition.

A recent writer upon this subject has said, "that what excess in the indulgence of this imperious passion is, the majority of men do not know, and physicians do not give such heed to their instructions as they should, both for the good of man and of woman."

Parvin aptly says, "that in bringing instincts, appetites and passions under the domain of reason, conscience and will, man proves his native nobility and his hero power." Would that all men could be educated unto this sublime effort, and secure this triumph. But if those who are to teach men the laws of life are silent, what wonder that men, young men especially, rush into excesses. When so good a man as Montgomery, of Dublin, taught that sexual intercourse might be permitted during pregnancy, though less frequently, it seemed like a sad compromise with the urgent claims of a powerful passion in the bosom of man.

One reviewer of this author has said, "better have taught that the special purpose for which the instinct was given

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having been fulfilled, that instinct must for the time being be held in abeyance."

The uterus requires rest at such a period, and frequent disturbance from the cause mentioned, is sometimes unquestionably followed by local disorder, and as I believe, production of what are known as certain sympathetic disturbances of pregnancy.

I have yet to see the case of persistent vomiting in pregnancy where the patient was not living with her husband during the early months of gestation; so also, have I to see my first case of persistent morning sickness where the trouble did not quickly subside when seperate beds were prescribed and faithfully adhered to.

I fancy I hear some one facetiously remark, "a novel remedy for morning sickness." To any such let me reply, take careful observations of your cases of this nature, and see if such observations do not confirm my convictions.

Physiological rest is indicated too, in a class of cases different from those previously mentioned. Wherever coition even moderately indulged in, is followed by much pain, by menorrhagia, by uterine catarrh, by a metritic or pelvi-peritoneal inflammation, the indications are clear for the absolute necessity of rest from this disturbing cause.

More than once have I seen uterine fibroids occurring in those who were never married, or who were widows, making but slow progress, roused into rapid growth as a consequence of their subjects marrying. So too, there are few of you, doubtless, who have not been called to treat cases of simple vaginitis, or labial abscess, or inflammation of the vulvo-vaginal gland, resulting from excessive or violent coition; and in the treatment of such disorders rest from the disturbing cause is of paramount importance.

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This theme, physiological rest, would admit of much longer discussion, and many more illustrations might be adduced to show its importance; and a still stronger protest too, might be made in behalf of suffering women, daily compelled to gratify the lust of worse than brutal husbands; cases though rare, are yet by far too numerous. But it is not my purpose to take up further time of the Section; we have a goodly list of papers to listen to, as you will observe by consulting your programme, and should what I have said lead any one to a more careful study and application of rest as a therapeutic agent in the treatment of certain uterine disorders, my desire will be accomplished.

DANGER SIGNALS IN CERVICAL OPERATIONS.

EDWIN PHILLIPS, M. D.

The name of Thomas Addis Emmett, the originator of cervical operations, will find a place in female surgery by the side of Robert Houston and Ephraim McDowell, for his labors in describing and perfecting the operation and pointing out the danger signals in cervical operations.

Cervical operations have improved the physical condition of many poor, suffering females who were dragging out a miserable existence. But like all new agencies for good in the hands of the skilled, they may in the hands of the unskilled bring forth equally as good results in some cases, but as a rule the complications and contra-indications are so intricate that the unskilled fail to see the danger signals,

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and in the place of restoration to health we have physical disability and perchance death.

Before mentioning the complications which confront the operator, may it not be well to give an outline of the organ on which many of the profession are so eagerly devising ways and means to restore to its original symmetry.

The cervix uteri is cylindrical in form, one and one-fourth inches in length, and is formed of smooth muscular fibres, embryonic muscular fibrillæ, nucleated connective tissue, elastic fibres, blood vessels, glands, lymphatics and nerves. the mucous membrane is from one to two millimeters in thickness, wrinkled and thrown into folds on its anterior and posterior walls. The bottom of each fold is thickly studded over with racemose glands; the entire membrane is composed of embryonic tissue in various stages of development; fibro-plastic fusiform bodies, cells, nuclei, connective tissue, granular amorphous matter, glands, lymphatics, blood vessels and nerves. The lymphatics that are found in both the muscular and mucous structures convey the lymph directly to the cervical and uterine junction, where they unite in vessels of various sizes and pass into the lateral cellular tissue at the base of the broad ligaments, uniting with the lateral pelvic glands.

The cervix is supplied by nerves both from the spinal and ganglionic systems, the spinal nerves from the sacral plexus, the sympathetic from the inferior hypogastric ganglia. The cervix is made up of this compound structure in all stages of development, from the embryonic tissue cell to the fully developed muscular fibre, and becomes torn or lacerated during parturition or abortion. If the laceration is slight, as a large proportion of them are, the tear soon unites by granulation and the patient resumes her household duties.

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In another class of cases the laceration is deep, and perhaps bilateral, producing the following pathological conditions, for the relief of which the operation is performed: sub-involution, chronic metritis, cervical eversion and cicatricial tissue at the angle of laceration.

In reviewing the history of this operation from the author's own work, and the writings of Munde and Courty, we find four prominent danger signals:

1st. Pelvic peritonitis.

2d. Pelvic cellulitis.

3d. Adenitis peri-uterine.

4th. Inherited idiosyncrasy.

As to the frequency of these complications, Aran states that out of every one hundred cases of uterine disease, fifty-five per cent have peritoneal adhesions, showing that we have peri-uterine inflammation in a slight or severe form.

Courty states in that every one hundred cases of uterine disease, we have thirty-three per cent of peritoneal inflammation; of this number we find more married than single.

Taking Aran's and Courty's statistics we find that we have forty-four per cent of all uterine diseases complicated with peri-uterine inflammation.

Dr. Pallan states that his statistics show that forty per cent of women suffering from uterine disease have lacerated cervix.

Dr. Goodell's statistics show that thirty-three per cent of women suffering from uterine disease have lacerated cervix.

Dr. Emmett's statistics show that thirty-three per cent of women that have been impregnated and are suffering from uterine disease have lacerated cervix.

Dr. Munde's statistics show that twenty-five per cent of all women with uterine disease have lacerated cervix.

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Taking the statistics of Munde, Emmett, Goodell and Pallan, we find that thirty-three per cent of all women with uterine disease have lacerated cervix.

Thirty-three women out of every one hundred having uterine diseases, have lacerated cervix; and in every one hundred women with uterine disease, forty-four have either pelvic cellulitis or peritonitis.

Dr. Munde states that less than one-half of women with lacerated cervix need any treatment, either operative or medicinal; as we have shown by statistics that thirty-three per cent of women with uterine disease have lacerated cervix, and by Munde that less than fifty per cent of those require treatment, we have but sixteen out of every hundred women with uterine disease needing treatment for lacerated cervix.

Courty's and Aran's statistics show that seven of those sixteen cases are complicated with pelvic peritonitis or cellulitis, and the application of the knife or scissors will rekindle this slow chronic peri-uterine inflammation into one of activity. The first two complications, pelvic peritonitis and cellulitis are to the cervical operator as the calcium lights on the rapids of St. Lawrence are to the navigator—danger signals.

The cervical operator, unlike the navigator, will not always look carefully for danger signals; while the signals to the navigator are alone perceptible to the sense of sight, the signal to the cervical diagnostician are alone perceptible to the sense of touch.

If the physical signs reveal the following pathological changes it is unsafe to operate on the cervix:

A tense thickened condition of the vaginal roof as though it had been coated with a layer of plaster of paris, partial or entire immobility of the uterus, shortening of one or both of the utero-sacral ligaments with tenderness; a thick-

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ened indurated deposit posterior to the uterus in the region of the utero-sacral ligaments; an inflammatory deposit between the lamina of the broad ligaments which usually has a firm attachment to the pelvic wall; the cervix drawn to either side by shortening and contraction of either broad ligament; a general or local tenderness of the pelvic tissue with an absence of the elastic feel.

As a general rule it can be safely said that as long as there can be detected by pressure with the finger any tenderness in the connective tissue in the neighborhood of the uterus, we may feel fully satisfied that a certain amount of peri-uterine inflammation has existed and does at present exist, though in an inactive condition, and needs but a slight provocation to cause it to take on an active form; hence, it will be dangerous to operate on the cervix.

The third danger signal is peri-uterine adenitis, which is an inflammation of the pelvic lymphatic glands which are found in the lamina of the broad ligaments and posterior to the uterus. This glandular inflammation is usually complicated by an inflammatory induration of the adjacent tissues (localized peritonitis or cellulitis). It usually occurs from injuries to the cervix (abortion or parturition.)

With an existing chronic adenitis we may, by cutting or lacerating the cervix, set up a lymphangitis which may rekindle the old peritonitis and cellulitis.

The physicial signs which indicate adenitis are only diagnosed by a digital examination.

When adenitis exists, we find behind and to the side of the uterus, small rounded tumors varying in size from that of a pea to three-fourths that of the normal ovary; the tumors may be smooth, irregular or roughened; they do not have the smooth velvety feel of the ovary, but simulate the

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ovary by being sensitive to touch, and appear to be connected with the uterus and the tissue above the cul-de-sac.

The fourth and last danger signal is "inherited idiosyncrasy," which is peculiar to the individual.

What is it, or how to describe the existing predisposition is beyond our comprehension.

With some women the predisposition is so marked that the introduction of the sound into the uterus, or the replacement of a displaced uterus by the hand, may set up a violent pelvic peritonitis.

By reviewing the statistics that we have mentioned, we find that on an average, sixteen women out of every one hundred suffering from uterine disease require operative procedure or local treatment for lacerated cervix; and seven of the sixteen requiring treatment are living walking danger signals, as shown to have either pelvic peritonitis or cellulitis by Courty and Aran, warning the skilled diagnostician of the danger to be encountered by a cervical operation.

When skilled diagnosticians like Munde and Goodell, who have had years of training, fail at times to detect and recognize the signals of danger, what are we to say of the large army of cervical operators who never have had nor can obtain the training to cultivate their sense of touch so as to be able to detect the existing danger signals and carry out the positive instructions of Dr. Emmett, the originator of the operation?

Gentlemen, as we said at the commencement of this paper, it is the abuse of this operation which "calls for a halt" in cervical surgery. Every city and village in the Northwest has its cervical operators who have popularized the operation by constantly diagnosing all symptoms as being dependent on cervical laceration; and urging the

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great benefit afforded to suffering womankind by the simple operation. Even in the city of Minneapolis, during the past five years, the persuasive powers of cervical men have been so great, that women in the second stage of phthisis pulmonalis have been induced to submit to the cervical operation as the only panacea for their physical disability.

Others have been in the training school for the operation with both pelvic cellulitis and peritonitis; the first class of patients only required constitutional treatment for consumption; the second simply local hygienic measures.

Lawyers call this advice to patients malpractice—doctors, cervical surgery; like all new agencies for good, some of those who submit to the operation are benefitted, others remain in about the same condition as before the operation, the third class fall victims of peri-uterine inflammation and remain invalids for a lifetime.

Even in the city of Minneapolis, the "great northwestern metropolis" for cervical surgery, the operation is losing its prestige and popularity with the conservative men in the profession; not but that the operation is indicated in some cases and has been skillfully performed, but from the abuses which have gradually crept in and have taken the place of merit which the author of the operation intended.

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IMMEDIATE RESTORATION OF THE PERINEUM AFTER LABOR.

ARCHIBALD McLAREN, M. D.

I must crave the indulgence of this Society for bringing before it a subject so worn and threadbare, upon which so much of worth has been written of late. I must plead as my excuse for so doing the fact that I am constantly meeting with cases who are suffering from the effect of neglected perineal tears, and that a large number of these cases give the same history, viz., that after delivery they were not examined by the attending physician.

When asked by such a patient, "Ought not this tear to have been immediately restored?" I always say, "That is a question which one cannot answer now without consulting your attending physician, for many conditions of the system might have made it unwise at the time." Although the teaching of many eminent men makes such an answer possible, still I must say that the conditions or combination of conditions which might make it either unwise or dangerous to perform immediate perineoraphy are very rare. The excuse that these tears do not always unite seems hardly worthy of discussion, for if the stitches do nothing else than to lessen the risk of septic absorption, they are well worth the trouble of introduction.

In studying this subject there seem to be two powerful reasons which lead many physicians to neglect the immediate restoration of perineal tears.

The first of these reasons is the mistaken idea which is held by both the laity and by many physicians, that the obstetrician is always responsible for the perineal tear. The

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layman has been led to believe that if some older, some more experienced or more careful physician had been employed, that this very large child of his would have been brought into the world through this very small opening without any injury to the opening.

Some of our best teachers on the subject of gynæcology are apt to lean to such ideas. Only a short time ago I heard a physician who is one of the best of teachers, tell his patient that a certain laceration of the cervix and perineum, from which she was then suffering, would not have occurred if her physician had seen her earlier in confinement, and given her a little chloroform.

Now such a theory as this is certainly unfounded, and more than all is very unjust to the obstetrician. For suppose the woman to have been small, that she has had a very rapid labor with a large child, so that the parts have not had time to dilate; or if the labor has been dry or tedious so that the child's head has rested too long in one position and the tissues have suffered from pressure and have failed at the last simply from the loss of vitality. Or suppose the labor to have been abnormal from the position of the child, occipito-posterior, brow or face presentation, or where it has been necessary to introduce the hand into the vagina, or to deliver with forceps.

In any or all of these conditions ought we to say that the fault is with the obstetrician? On the other hand should we not rather be surprised when the woman passes through such a labor without laceration? The proper teaching it seems to me should be that in certain cases laceration is unavoidable, and that the fault lies not so much in the production of laceration as in the overlooking of it.

There are certain procedures advised by different authorities for the prevention of this accident, viz., support of the

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perineum, pressure on the advancing head, chloroform, use of the forceps and episiotomy. Now we know that the first four of these methods will accomplish much in careful hands, where the careless use of these same means, especially the forceps, will produce great harm. Still in certain cases any or all, however carefully used, cannot prevent a certain amount of perineal laceration.

In regard to the last method, episiotomy, I speak from a theoretical standpoint, for I have never seen it performed nor used it myself, because I have never seen a case which I thought called for the operation. Of course if in a certain case I thought the woman could not be delivered without a complete tear of the perineum, rather than see the laceration extend through and into the rectum, I would most certainly perform episiotomy. But as the history of complete perineal tears shows, that they cannot always be foreseen, and as many of these injuries commence in the recto-vaginal system above the apex of the perineal body, and as we are only made aware of the injury by the external explosion, therefore I am forced to think that episiotomy can but seldom be advantageously used.

What do we actually accomplish by this operation? The knife is applied to the side of the vagina during a time when the parts are strained to their utmost; the mucous membrane, the fascia, bulbo-cavernosus or sphincter vagina muscle and possibly some fibers of the levator-ani muscle are divided, allowing the anal segment of the pelvic floor to drop back and in this way give room for the child's head to pass. We now have to deal with an anatomical injury which sometimes occurs in a severe labor without the intervention of this operation, and which produces in after life a condition called laxation of the vagina; where, although the woman has a complete perineal body, she still suffers from loss of power,

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the power of contracting the introitus vaginæ and of supporting the rectum, and as a consequence she suffers from cystocele, rectocele or prolapsus. Episiotomy therefore produces one variety of laceration of the perineum, and one which is neither easy to limit nor to repair.

The second and perhaps the most important reason why the physician hesitates about making this simple perineal operation lies, it seems to me, in the operation itself, and the way in which it is now usually performed.

The professional mantle of Baker Brown with his wonderful ingenuity in accomplishing a certain result in the most impracticable way, seems to have fallen upon us all. In deciding for or against this operation the physician recalls the suffering and the pain which he has seen follow this operation, requiring large amounts of morphia; he remembers the bandaged limbs and the nurse with her dirty catheter and decides that the cure is almost worse than the disease; consoling himself with the thought that some of these tears unite without any operation, and others suffer no inconvenience in after life although badly torn.

If you seperate to any great extent the limbs of either a living or dead woman, you will find that the labia majora can be but very slightly separated, and that the labia minora cannot be separated at all. Keeping this fact in view, we see that bandaging of the limbs is of no value, and also that the deep constricting stitches which are passed from the skin surface of the perineum are not as necessary as has been supposed, for if the stitches are properly set there should be no strain upon the parts. The same is true in secondary perinæorraphy, providing that the denudation has not been carried too far out upon the labia, striving to bring together parts that were never in contact.

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Deep silver stitches have their place, but should not be the only sutures used in the perineum, and for several reasons: First, that in order to bring the sides of the wound together and close the mucous edges of the tear, the wire must be very tightly twisted; and even then we cannot be sure that the tear in the mucous membrane, the most important part, is accurately apposed. Second, the twisting of the stitches draws the perineal body downward just enough to bring the highest point of the perineum in front of the meatus urinarius, so that the first time the woman urinates, part of the urine flows backward into the vagina, irritating the raw surface, produces nervous retention, and thus necessitating the use of the catheter, which is always a deplorable circumstance. The stitches often cut leaving irritable perineal scars which must heal by granulation and give as a result a skin perineum, perfect externally, but of no physiological use to the woman. In disposing of the free ends of the stitches, they are usually bound together so that touching or moving one moves them all, so producing a great deal of unnecessary pain.

The operation that I have to propose in the place of the ordinary perineal operation is as follows: When, by examination with the finger or by both the finger and eye, a perineal tear has been discovered, the woman is immediately brought to the edge of the bed in the lithotomy position, and a sponge wrung out of a strong bi-chloride solution is pushed into the vagina above the upper angle of the tear to keep the blood from obscuring the sight during the suturing. Use a short round needle threaded with chromicised or sublimated catgut suture and a short pair of needle forceps, all of which should be carried in the obstetric bag. Commence to stitch in the upper angle of the tear, and after

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making it fast enter the needle on one side of the wound just below the edge of the tear in the mucous membrane, bringing the needle out in the bottom of the wound; re-enter the needle at the bottom of the tear, bring it up to but not through the mucous membrane on the other side of the tear; in this way, whipping together and uniting the wound with an over and over continuous buried stitch, bringing the mucous membrane accurately in apposition and leaving no part of the suture exposed on the mucous surface. On the skin surface one or two interrupted catgut stitches will close the skin edge of the perineum. For this suture sublimated or chromicised catgut is the best, because it either absorbs at the end of about two weeks or becomes encysted and produces no irritation.

If thought necessary a single silver wire stitch can be introduced on the skin surface of the perineum simply to act as a splint. The free ends of the wire should be controlled by a compressed shot. This will produce no irritation, no pain, and is the best way of securing all silver stitches whenever it is necessary to use them for the restoration of the perineum.

By this method of operation the anatomy of the perineum is not disturbed, the highest point of the perineum is left behind the meatus urinarius, so that when the urine is passed it does not flow back into the vagina; consequently it is very seldom necessary to use the catheter. The pain after this operation amounts to almost nothing, even a single one-fourth grain suppository of morphia is seldom required, and according to my experience, the failures to unite are very, very few.

In my last seventy cases of confinement, covering a period of a year and a half, I have used this method exclusively, and with the most satisfactory results both to myself and

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to my patients. During this time I have had eight perineal tears which I considered as necessitating suture. All but one of this number united perfectly, and in not one was there any rise in temperature showing septic absorption. They have all been able to pass water without the use of the catheter. So far, in this paper, I have not taken up the subject of complete perineal tears. The restoration of such an injury would not differ from the above operation, excepting that I should first introduce a buried catgut stitch which would bring together the m. m. of the bowels, and afterwards the buried stitch as mentioned above.

The after treatment of a woman after perineal suture does not differ from the ordinary care of a woman after confinement—light diet. Antiseptic vaginal douches only when the lochia, pulse and temperature show any danger of septicemia. The bowels should be moved by an active cathartic on the morning of the third day, and the woman kept in the recumbent position for about fourteen days.

I do not claim originality for this operation, but I do claim superiority over the ordinary perineal operation, and I am sure that if the members of this Society who have been accustomed to use the old silver constricting or bunching stitch will give this method a single trial, they will never subject their patients to the inconvenience and pain, I may almost say tortures, of the older method.

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THE TREATMENT OF SUPPURATING OVARIAN CYSTS.

J. W. MACDONALD, M. D., L. R. C. S. E.

Of the many conditions which may complicate ovariotomy, none are more serious than inflammation and suppuration of the sac. The causes most commonly met with are blows, falls or other injuries, failure of the general health, some intercurrent disease, extension or inflammation from a neighboring part, and the jolting and shaking of the patient on a long journey. Tapping the cyst has been regarded by some writers as being almost invariably followed by suppuration. That this is one of the chief dangers of tapping no one will deny, but that it is the invariable result is certainly incorrect. Bright, in his work on adominal tumors, relates the case of a woman whose ovarian cyst was tapped fourteen times during a period of between four or five years, a total of sixty-eight gallons of fluid being withdrawn. Only the last two operations were followed by suppuration of the cyst. Many cases suppurate where tapping has never been performed, as in five cases recorded by Keith; in some of his cases suppuration came on months after the operation.

The symptoms are not so generally pronounced as in peritonitis, yet suppuration of the cyst gives rise to a group of symptoms which cannot easily be overlooked. The condition may or may not be ushered in with a chill, the pulse increases in frequency and the temperature rises rapidly. Too much reliance must not be placed on a rise of temperature as a symptom. In two of Keith's most hopeless looking cases there was a remarkably low temperature;

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in one, the thermometer registered 95.5 to 96.5 F., and yet the contents of the cyst were intensely putrid; the pulse for some days before the operation steadily rising, the temperature steadily falling. In the other case the cyst had burst into the peritoneum and at the time of the operation the temperature was 97° F.

The tongue is red, pointed and dry, the teeth are often covered with sordes, and the stomach is more or less irritable. Tenderness over the abdomen increases rapidly, but at times there is absence of pain. Delirium is not uncommon. The symptoms of blood poisoning are generally present, and the appearance of the patient is indicative of a typhoid condition.

Treatment.

Formerly these cases were all allowed to die, and death is certainly the only termination when the disease is allowed to run its course.

Tapping speedily reduces the size of the cyst and for the time being affords relief. It should not, however, be resorted to except under very peculiar circumstances. By it, adhesions are caused which make a future operation difficult. There is a considerable risk of the cyst contents getting into the peritoneal cavity—an accident which is sure to set up peritonitis and septicæmia.

In 1868, Bryant recommended stitching the sac into the abdominal wound in the course of an ovariotomy, emptying the cyst of its pus and allowing it to heal by granulation. The history of the patient treated by him in this way is not very encourging, for an abdominal fistula existed and continued to secrete pus for two years.

We look in vain through medical writings for any satisfactory methods of treating suppurating ovarian cysts,

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until Keith took a new departure and boldly advocated extirpation of the cyst as the only hope of saving the patient's life. His first operation of this nature was in December, 1864, and the patient was in a state of semi-delirium from septic fever, the result of a large suppurating tumor. To use Keith's own words:

"This was probably the first time that surgery broke in upon an acutely inflamed peritoneum. The intense lividity, amounting almost to blackness of the abdominal contents, and the spongy tenderness of the inflamed intestine were then strange to me, though thought little of now. Recent lymph was present everywhere; adherent bowel and mesentery hedged in a thick walled cyst, the base of which was in a complete state of slough. Inflammation had gone on to gangrene, and there was intense putridity. After an operation, which went on for two hours, the patient was placed in bed, cold, vomiting and nearly pulseless. It seemed as if we had simply killed her, yet she got rapidly into heat, the restless delirium at once disappeared, there were warm prespirations, much sleep, and a recovery without a drawback."

Up to 1875, when Keith published his article in the Edinburgh Medical Journal, he had resorted to ovariotomy in ten cases of acute and two of chronic suppuration of ovarian tumors. All recovered except two of the acute cases.

Following Keith's example the operation has been done successfully by many operators, among whom are Trendelenberg, Spencer, Wells, Weil and Parish, while unsuccessful cases have been reported by Munde and Hildebrandt.

The brilliant results achieved by Keith and those who followed his example leave no doubt in the minds of the profession that the proper course to follow in the treatment

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of a suppurating ovarian cyst is to boldly resort to ovariotomy and remove the cyst.

But there are cases where the patient is surrounded by such unfavorable circumstances and the chances so utterly against us that to operate would be simply foolhardy; or the patient may object to the operation; or the physician be unprepared to adopt so formidable a procedure. In any of these cases I think we have still a mode of treatment which promises good results.

Collections of pus, such as mammary and other abscesses, can be very satisfactorily treated by a method which was first advocated by Dr. Wile at the meeting of the American Surgical Congress in 1888. This consists in drawing off the pus by an aspirator, injecting the cavity of the abscess with peroxide of hydrogen, which penetrates every nook and corner and brings away the pus in an abundant froth. The injection is repeated until the peroxide comes away clear. The abscess is then injected with corrosive sublimate solution 1 to 2500, again emptied and a compress applied, after which the secretion of pus ceases and the abscess is cured.

I applied these principles to a suppurating cyst in the following case:

Mrs. S., married, aged 37. In July, 1888, I diagnosed a cyst of the left ovary, and at her request deferred the operation till September. She was then in fair health considering her condition. The history of several inflammatory attacks in the abdominal region made it probable that extensive adhesions existed.

On the 27th day of August she came to my office suffering severe pain over the lower part of the abdomen. There was great tenderness over the left iliac fossa, and considerable fever. For several days following she had

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retention of urine and severe abdominal and pelvic pain which had to be controlled by large doses of morphia.

Sept. 4. A pelvic abscess has formed and fluctuation can be felt in Douglas' pouch. In consultation with Dr. Phillips an incision was made here and a drainage tube inserted. About a pint of pus escaped, but no impression was made upon the tenseness of the ovarian cyst. Her symptoms rapidly improved. The abscess cavity was irrigated through the drainage tube every day until the discharge of pus ceased.

Sept. 19. The pain over the abdomen has returned with great severity. She has had chills, and again there is retention of urine. The pulse is 130 and the temperature 103°. Dr. Phillips again kindly saw her with me. Supposing that the abscess was retaining pus, we again inserted a tube, but no pus returned. The ovarian cyst had evidently enlarged very rapidly during the past week, and it became imperative to remove the tumor by ovariotomy. Her exceedingly weak condition and the possibility of there being a second pelvic abscess induced us to aspirate the sac as an exploratory measure. An aspirator needle was introduced where we believed an extensive adhesion existed, that is to say, about two inches to the right of the median line, and on a level with a point midway between the umbilicus and pubes. A gush of black, horribly putrid fluid followed, and left us no doubt of the existence of a suppurating cyst. She was almost in a state of collapse; her surroundings were anything but favorable for an ovariotomy, and moreover, she shrank from the operation, particularly as the tapping gave great relief. The canula was left in position and about two feet of rubber tubing connected with it, the free end of the tube being kept submerged in a bottle of carbolic lotion.

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On the following day she was considerably better, and the tube was carrying off large quantities of pus.

Sept. 22. By means of Allen's surgical pump I injected the sac with about three ounces of a five volume solution of peroxide of hydrogen. This was quickly drawn off and like quantities injected several times, until the fluid came away clear. A marked improvement in her symptoms followed, her temperature fell from 103 to 100, and her pulse from 130 to 96; she felt comparatively easy and slept well.

During the next four weeks I washed out the cavity with peroxide, the treatment each time giving great relief, until a time came when I found it impossible, owing to some obstruction or tortuosity in the fistula, to get the injection into the sac.

Meanwhile having gained considerable strength, and the pain of introducing the tube and washing out the cavity being very great, she consented to undergo the operation of ovariotomy rather than take the chances of surviving a long course of suppuration. She has a pulse of 108, temperature 100°.

Nov. 20. Had her removed to St. Barnabas' Hospital for the purpose of operating.

Nov. 21, 9:30 A. M. Operation. An incision of four inches was made in the linea alba, and the peritoneum slit open, when a quantity of ascitic fluid escaped. The cyst wall was found to be firmly adherent at every part of its surface to intestines, the pelvic organs and the peritoneum. At the point where the sac had been tapped the cyst wall was firmly attached and formed a dense, hard, cord-like neck about three-fourths inch in diameter and about four inches long, leading down towards the left ovary. The cyst was of the shape of a small florence flask with a very long neck.

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Near the external opening (the point of tapping) the canal was tortuous, and this explained why I had failed latterly in getting the injections into the sac. A pair of dressing forceps was pushed into this and the tissues forcibly stretched, when a flexible male catheter was pushed in till it reached the bottom of the sac at a distance of nine inches. About three ounces of pus escaped.

The evident tendency of the cyst to atrophy, the apparent impossibility of separating the old and universal adhesions, and the certainty that I could now get the injections to the very bottom of the sac, induced me to relinquish the attempt to remove the cyst and regard the operation as an exploratory incision. This course was approved by the physicians present, and the abdominal wound was closed. The patient was put to bed, the catheter was left in as a drainage tube, and the discharge carried by rubber tubing to a bottle of carbolic lotion beneath the bed.

Nov. 22. She has had a good night, feels comfortable and is quite cheerful.

Nov. 27. The temperature has been normal since the 22d; flatus has passed daily and she has felt no pain. The tube was withdrawn from the tube—it had been gradually pushed out, the suppurating track healing behind it. The length of the fistula through which I could pass a small catheter was five inches. This was thoroughly irrigated with peroxide of hydrogen until the liquid came away clear. It was then injected with corrosive sublimate 1 to 1000, and this again washed out with 1 to 5000, and dressed with iodoform gauze.

On the 30th the stitches were removed from the abdominal incision, the sinus was completely dried up, she felt quite well and wished to leave her bed.

After remaining quiescent for a few days, symptoms showing that suppuration in the cyst still continued were

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observed. The pulse and temperature rose, the fistula re-opened and pus was freely discharged. After repeated injections and drainage for ten days the discharge finally stopped. She resumed her household duties, and up to the present time, a period of six months, has enjoyed good health with no signs of a return of the disease.

Two points in connection with the case are worthy of attention. First.—The marked improvement in the symptoms which followed the use of peroxide of hydrogen. While it did not immediately bring about the happy results which often follow its use in an ordinary abscess cavity, it served to clean out the cyst, checking, for the time being, the absorption of septic matter. It also cut short what at best would have been a prolonged and exhaustive suppuration. Second.—The question of stopping the operation when it seemed impossible to remove the cyst without a fatal result.

I am aware that many operations are carried to a successful termination where the adhesions at first sight would appear to offer insurmountable difficulties. Many of such cases, however, are unsuccessful, and but few of this class find their way into medical records. With our present advantages, opening into the abdominal cavity is a comparatively safe proceeding, and explorating incisions are justifiable. It is certainly disappointing—at times humiliating—to set out to remove a tumor and be compelled to stop half way, but if we desist at the proper time, we add but little to the patient's danger, the abdominal incision quickly heals, we have cleared up all points in the diagnosis which were previously obscure, and our consciences cannot accuse us of having shortened a fellow creature's days.

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ARTIFICIAL VESICO-VAGINAL FISTULA, WITH REPORT OF A CASE.

C. M. FERRO, M. D.

There is not, I dare say, among the whole category of human maladies, a disease that so obstinately defies the efforts and skill of the medical man as chronic cystitis. In cases of advanced cystitis it appears that all therapeutic agents are powerless to alleviate the suffering, except it be the use of opium in some form. To that distinguised American surgeon Dr. Willard Parker, the profession is indebted for the first suggestion of surgical interference in this disease, although Emmet and Bozeman both lay claim to priority. It is said to be very likely that Emmet is entitled to credit for having first called the attention of the profession to this method of treatment in the female.

Dr. Hunter McGuire of Richmond, Va., has in the last few months contributed a valuable description of his method of dealing with cystitis complicated with prostatic enlargement, which should receive and rivet the attention of every surgeon in our country. When we contemplate the frequency of this distressing malady and its final fatality, it is quite astonishing that so much time is lost in temporizing with drugs and the patient at last abandoned to hopeless suffering.

The creation of a fistula allows the urine to escape as soon as it enters the bladder, and gives this organ entire rest, and thus allows the inflammation to subside, ulcerations to heal. The establishment of the fistula is simple in its execution, comparatively free from danger, and bestows upon the unfortunate sufferer almost immediate relief.

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While the fistula remains it of course becomes necessary for the patient to wear a urinal or soft linen pads to absorb the urine as it escapes.

Mrs. D., a married lady, and the mother of four children, had been suffering with chronic cystitis for four years, when she consulted me for treatment. Her case was an extreme one; the urine was loaded with mucus, blood and phosphates, and I at once advised opening the bladder, but she seemed adverse to any such procedure. I gave her from time to time different drugs, many of them vaunted as specifics. I irrigated the bladder with washes containing boroglyceride, boracic acid, carbolic acid, until it seemed that all measures were exhausted. Her suffering was intolerable, she being compelled to void the urine every twenty or thirty minutes night and day.

At the expiration of a year's treatment she at last concluded to have the bladder opened, which I accordingly did on the first of last September. A digital examination through the wound revealed the walls of the organ contracted and thickened, the mucous lining covered with granulations, ulcerations and deep rugæ, rendering it palpable why drugs would be utterly hopeless to mitigate her condition.

An incision an inch or an inch and a quarter in length in the median line of the vagina was made, and the mucous membrane of the bladder stitched with silk to that of the vagina.

The second night following the operation her slumber was sweet, refreshing and unbroken during the entire night, and as I approached her bed in the early morning she said, "Oh! Doctor, I slept all night, or else I dreamed that I did; it does not seem possible that it can be so." The woman had been transported from a world of atrocious suffering to an elysium of inexpressible comfort and relief.

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This is, so far as I have been able to learn, the first case of the kind that has been operated on in the State. But whether so or not, the satisfactory results of this case induces me to urge my fellow practitioners who have under their treatment these unfortunate cases, to adopt this measure in advanced cases of cystitis.

I am aware that there may be some who will undoubtedly oppose this method of treatment. In the St. Louis Weekly Medical Review of May 25, 1889, Dr. G. H. Bond offers the following objections to this method and recommends stretching the urinary canal "until the contractility of the sphincter is paralyzed for a time, which may be indefinitely extended by repeating in the same way as often as may be necessary."

His objections to opening the bladder are: "First, the general difficulty of keeping the fistulous opening patulous for a sufficient time to allow the diseased bladder to regain its normal condition; secondly, the irritation often occasioned by the button commonly employed for this purpose; and, thirdly, the more serious trouble which we meet with in exceptional cases of closing the fistulous opening."

I will reply to his objections by saying that no difficulty will be experienced if the edges of the bladder wound are stitched to those of the vagina. When this is done there is no use for the button, there is no loss of tissue, and where the operation can readily be performed, the parts can be almost as easily restored to their usual integrity. Again, these cases frequently require a year or more to restore the bladder to health after the creation of a fistula, and if cases treated by dilation of the urethra are frequently required to be often repeated, it seems to me that treatment by dilation must prove more obnoxious to the patient than that of establishing and eventually closing a fistula.

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I do not advise the operation in cases of incipient cystitis and not until other and well-known measures have been adopted.

Dr. A. J. C. Skene, of Brooklyn, is perhaps one of the most distinguished authorities on diseases of the female bladder in America. In his recent work on diseases of women, after describing various measures to be adopted in these cases, I note the following: "All of the means of treatment (including dilation) yet described will fail in some of the worst cases of chronic cystitis. Indeed, this has led to the last resort, as I look upon it, namely, cystotomy for the establishment of vesico-vaginal fistula to drain the bladder and set it at rest. The perfect rest obtained by the urine flowing out through the fistula as soon as it enters from the ureters, places the inflamed surfaces in a condition to recover. This is certainly a great triumph and is especially applicable in cases that are incurable by all other means. Indeed, it is adapted to cases that are incurable by this operation, because it gives relief from pain and makes the last days of the sufferer tolerable.

Dr. T. A. Emmet takes a much more decided ground, and says that our management of chronic cystitis is limited to one procedure, and that is the establishment of a fistula. He further relates several cases where women who had submitted to this operation and the bladder trouble cured, had refused to have the fistula closed for fear of a return of the cystitis.

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LAPAROTOMY FOR DOUBLE OVARIAN CYSTS.

MARY S. WHETSTONE, M. D.

Miss J. was sent to me Sept. 4, 1886, by Dr. H. H. Kimball, with diagnosis of an abdominal tumor. Swede, unmarried, age 20, domestic. Menstruated at 15. Function normal in every respect, except a little pain during the period. When 16 years old she observed that she had a larger abdomen than other girls of her age, and that it increased in size from year to year. She stated that during the summer of 1885 she began to lose strength and weight, which continued until, when I saw her for the first time, she was unable to do hard work.

Abdomen presented the size of eighth month of pregnancy. Percussion revealed distinct dullness and fluctuation over the entire abdomen to ribs, except in the lumbar regions, where it was tympanitic. A sulcus was observed to the left of the rectus abdominis.

Vaginal examination: uterus normal, except the fundus was inclined toward the right side. Fluctuation quite distinct in the vagina.

Sept. 4, patient was sent to the hospital for an operation, which was performed.

Sept. 6, 8:30 A. M., Drs. Moore, A. S. Whetstone, H. H. Kimball, Elizabeth Norred and Annie Wass co-operating, an incision three inches long was made between pubes and umbilicus. A cyst was found on both ovaries, the right one about the size of an adult's head, with a short pedicle; the left cyst about one-half as large, and having a long slender pedicle. Cysts punctured, contents drawn off and pedicle tied with braided silk and stump dropped into the pelvis. A

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careful toilet of the abdomen was made with carbolized water. The incision was closed with silver wire and silk sutures and dressed antiseptically. The weight of cysts and contents was fourteen pounds.

Patient recovered from the anæsthetic without any unfavorable symptoms. She was given liquid diet, and the bladder catheterized. One-eighth grain morphia sup. were given every six hours to prevent action of the bowels.

Third day, A. M. Had a slight vaginal hemorrhage.

Fifth day. Bowels moved twice; no pain.

Seventh day. Removed wire sutures; union good.

Ninth day. Patient has been very comfortable. Temperature has been normal most of the time since the operation; the highest was 101.2° on the fourth day. Pulse ranging from 90 to 112; respiration 18 to 25 per minute. Rested and slept well and took food with a relish.

Tenth day. While the nurse was absent from the room for a few moments she returned to find her patient sitting in a chair on the opposite side of the room from the bed, and looking much alarmed. She explained that while sleeping she dreamed that some one called her, saying, "It is long past time for rising," and in her sleep she jumped out of bed, and then awoke to realize the true state of affairs. She sat down to await the return of the nurse to assist her back to bed.

The following evening temperature rose to 101.4°, and during the following five days it varied between 99.8° to 102.4° F. Pulse, 98 to 135; respiration, 20 to 36. Complains of slight pains between the right inguinal region and umbilicus; flatulence. Digital examination revealed sensitiveness to the right and above the uterus; uterus movable. On percussion, found a line of dullness in right inguinal extending toward the umbilicus about breadth of four fingers.

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Sixteenth day. A slight redness appeared to the right of line of incision, near umbilicus. Temp. 99.8°; pulse 108; respiration 29.

Twenty-first day. Opened a small abscess at above place. About one-half ounce of thick bloody pus escaped. Temp. 98.6°; pulse 88; respiration 28.

Thirty-second day. Patient was given a water enema to move the bowels, which was succeeded by a discharge of water and fecal matter from the sinus in the abdominal wall. Drs. Hunter and Kimball saw the patient with me. We introduced a slender probe into the sinus. It entered to the right of the median line and downwards to the depth of eight inches. Previous to this the probe never entered more than 1½ inches, and very superficially. The finger in the vagina or rectum failed to detect the point of the probe. We had no doubt but that the probe entered the intestine, as the space was roomy. At no time was the discharge from the abscess enough to indicate that the abscess cavity was other than of small dimensions. Thirty-second day, patient was allowed to get up. The abscess continued to discharge about one ounce daily, usually fecal matter and a trace of pus. Sometimes it would close up entirely and open again, but with only a slight discharge. She gained in weight and strength constantly, and has been in good health ever since.

Observations.

As to the cause of the abscess, we can only theorize. Ashurst says: "The circumstance of textural death or change in chemical or vital qualities under multifarious conditions which affect the blood and nervous centers, so as to disturb the equable interchange of material which belongs to normal nutrition, would seem to be a fertile cause of abscess. As to the mode in which pus formation takes place in the substance

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of tissues, as in the occurrence of an abscess, it is due to (1) the exciting cause, whether textural injury from traumatism or from local disturbance of nutrition, begetting a source of irritation which provokes an afflux of blood to the center of excitement."

In this case the injury was of traumatic origin. It is my opinion that the seat of injury was in the right rectus muscle, possibly about the right pedicle also, or both. This pedicle was short and thick, and a sudden movement like jumping out of bed tore some of the constricted tissues and thus set up an inflammation there. But that the injury was in the rectus seems more probable, because the most pain and induration was felt at that place rather than deep in the inguinal region, where it would have been first observed had the inflammation originated at the pedicle.

The character of the discharge that flowed from the sinus at first was like that of disintegrated muscle tissue. Explorations with the finest probe failed to detect a sinus farther than 1½ inches from the margin, and that was between the skin and fascia under the rectus.

The appearance of fecal matter I suppose resulted from the breaking down of the thin intervening septum between floor of abscess and the adherent intestine. The induration and dullness disappeared from below upwards.

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INVERSION OF THE UTERUS.

GEO. W. EMERY, M. D.

Playfair, and other writers on midwifery, describes this as an accident of great rarity. Only one case of this kind occurred in upwards of 190,800 deliveries at the Rotunda Hospital in Dublin, since its foundation in 1745. Braun states that of 150,000 births in the clinics respectively under the charge of Spaeth and himself, not a single complete inversion has come to their notice.

These authors must have referred to the acute form of uterine inversion or those inversions which immediately, or within a few hours, follow child birth, as we find Prof. T. G. Thomas, of New York, who, in his excellent work on Diseases of Women, page 461, says, "I have treated personally nine cases of inversion, of which six resulted from parturition and three from traction by sessile polypi. Seven of these were cured by replacement; one was left unreplaced, after removal of a sessile fibroid; one case ended fatally from peritonitis."

Prof. Emmet details three cases of chronic form coming under his treatment and observation, in his Principles and Practice of Gynæcology, page 419.

This condition, therefore, may be met with in both the acute and chronic form, and as the acute form is so exceeding rare, as before intimated, and its ætiology so different from the chronic form, the writer submits to this society a case of each class which has come under his observation, with some thoughts suggested thereby.

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Mrs. M. J. A., aged 44 years and mother of five children, the youngest of which was ten years old at the time of this investigation. The patient was corpulent, muscles flabby, marked indication of ænemia, but describes her last labor as reasonably good and without unusual hemorrhage. Nursed the child to the time of weaning (one year), and continued in good health for four years after this confinement, when she began canvassing for a publishing house, and while thus engaged, after a very tedious walk she was attacked by uterine hemorrhage, quite severe for some hours, but gradually diminished, and with short intervals of cessation, was thus continuous for some weeks. After getting about again she suffered more or less continuously with difficulty in locomotion; efforts at walking giving pains in the extremities and back.

About three years after this first attack, and when the lady was assisting in moving a stove, she described a sudden sensation as if a number of muscles had been suddenly stretched and something within had become displaced; this was accompanied by an attack of syncope and a very profuse flooding, and again the menses continued irregular and exhausting, increasing with every trifling muscular exertion ever since. Leucorrhœa, with watery discharges, has been more or less present since her trouble began.

Physical exploration being resorted to, the finger introduced into the vagina was met by a large tumor, indicating by its spongy feeling either a polypus or a displaced uterine body, and seemed to be occupying the whole of the cavity and almost protruding through the vulva. By traction with tenaculum it was brought slightly to view, and while from its spongy, altered and engorged condition and a noticeable loss of the arborescent configuration which marks the inter-

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nal surface of the uterus, causing some doubt to the writer, yet he pronounced the mass an inverted uterus.

Two subsequent examinations were made sustaining this opinion, and Drs. Hutchins, Rainey and Burwash were then invited to assist in investigating the case, and upon close examination, aided by the microscope (used by Dr. Burwash on a small piece of the tissue removed), the diagnosis already made was sustained by these gentlemen, and the patient advised and consented to an effort at replacement of the organ.

This operation was attempted a few days afterward in the following manner, the patient being first etherized: The right hand of the operator was immersed in hot water and then thoroughly oiled and introduced, while the left hand made counter pressure over the abdomen. This bi-manual manipulation was continued for about two hours, each one present alternating in efforts at replacement. The organ remained unyielding, and though hemorrage was very slight, it was decided by myself and colleagues to abandon further efforts and observe result of the very extended manipulation already made. The vagina was thoroughly cleansed with carbolic acid solution and cataplasms ordered externally with the hot douche.

The patient, at my subsequent daily visits, manifested very little discomfort; no hemorrhage followed our efforts and a speedy convalescence to her usual condition resulted. Hot weather coming on, and during my absence from the city for a few weeks, the patient was urged and induced to seek aid from other advisors, and further observation was lost.

My second case was that of the acute class, and was as follows: Mrs. F. S., aged 26 years, primipara, taken in

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labor at full term, July 27. Labor commenced about 6 A. M. and proceeded quite normally until the delivery was effected at 2:30 P. M., under chloroform. The placenta followed without any traction upon the cord, but with severe pains, and this was almost immediately followed by an immense hemorrhage which quickly produced a profound nervous shock. The patient in a few moments presented a very pallid and anxious appearance, respirations became hurried and labored, the skin cold and clammy, and these symptoms were speedily followed by an attack of syncope. In the meantime I had discovered on palpation that the uterine ball had disappeared, and my hand seemed to pass into a funnel-shaped opening. On passing my fingers into the vagina they immediately encountered a large globular mass, upon which I began firm and continuous pressure, and as the hemorrhage continued profuse I began the use of hot water. The patient would rally from her fainting attacks to a realizing sense of severe after pains, and my efforts between the pains were most earnestly directed in restoring the uterus to its normal position.

Soon after my discovery of the alarming conditions present I dispatched a messenger to Dr. Phillips requesting him to come immediately, which he did; arriving at 4:45 P. M., and sustaining diagnosis, proceeded to assist in reduction of the dislocated organ. Our efforts were continued alternately for about three-quarters of an hour, during one of which efforts my finger passed directly through the uterine muscular walls. The after pains had greatly ceased in force and frequency, when Dr. Phillips informed me that the organ was yielding under pressure and was speedily in place. I then passed my hand into the vaginal canal and on up into the uterus, while with

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my left hand I could describe the uterine globe from external pressure above the symphysis. Both Dr. Phillips and myself decided on the propriety of my remaining and keeping compression within the canal on cervix. The radial pulse was very small at this time, extremities cold, features sunken and eyes glassy. Stimulants were urged and given as deglutition would permit, but patient continued rapidly to sink and died at 6:40 P. M.

From my experience above recited I must express, first, my grave doubts of an immediate inversion of the uterine organ without being quickly recognized by the physician in attendance, and if after pains are severe the patient's life will speedily pay the penalty. In this impression I differ from our leading authorities on gynæcology, but I find that neither Emmet or. Thomas claim to have met a recent case of this kind in their practice.

Secondly, that the cases that have come under the observation of the profession in the chronic form of inversion have not been, in any one instance, traceable to the immediate birth, but are the result of inversion originating from extended lacerations, and that the inversion is very tardy in its entire completion.

Thirdly, that inversions, both recent and chronic, are the result of degenerate muscular tonicity, which was quite noticeable in both cases under my observation.

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UNDER WHAT CIRCUMSTANCES SHOULD ONE REFRAIN FROM THE INTRODUCTION OF THE SOUND AND THE PRACTICE OF INTRA-UTERINE MEDICATION.

E. E. BRUBAKER, M. D.

I shall address this paper particularly to the general practitioner, because belonging to that class myself I feel placed in a position to know that he needs constant reminding that there are cautions to be heeded in the methods of diagnosis and treatment employed in uterine and pelvic diseases. To the specialist and the physician in the city whose practice is largely confined to this class of cases, this subject will have perhaps but little interest because trite, but the busy practitioner whose diversified business includes the whole field of medical and surgical practice must bear in mind all the relations of cause and effect and all the indications and contra-indications as well of the whole field of medicine and surgery, and a discussion of this subject although trite to others may not be without interest and profit to him.

Let me say right here by way of an apology for bringing the subject of this paper before the Society, that I have had the opportunity of seeing harm result in a few instances from the use or rather abuse of the sound and misapplied intra-uterine treatment. I will briefly discuss the two questions separately.

As a great many physicians still persist in the frequent use of the sound for diagnostic purposes, it seemed to me proper to briefly point out some of the evils liable to result from

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its abuse. I do not wish to be understood, however, as sanctioning its use even where there is no probability of doing harm, as I believe that the uterine sound can have but a limited sphere of usefulness, and that in cases where it is absolutely necessary to ascertain the depth, patulency or direction of the uterine canal, the information can be obtained as well by the use of a flexible uterine probe, and if properly introduced by the aid of the speculum, with scarcely any liability of injury to the endometrium and with none at all to the peri-uterine tissues.

The uterine sound not being a readily flexible instrument must be bent to adapt itself to the shape and direction of the uterine canal; sometimes this can only be accomplished after repeated trials and changing the direction of the point of the instrument, and sometimes considerable force is required to get the sound to pass the internal os; under these circumstances there is great liability to wounding the endometrium on the one hand, or lacerating the tissues at the isthmus on the other; it may be said that this has occurred many thousands of times without resulting in anything more serious.

Yet upon one occasion I saw such a profuse hemorrhage result that the blood filled the vaginal depression posteriorally and flowed out over the speculum before I could put aside my sound and pick up my dressing forceps and secure a pledget of cotton to mop it up. I made pressure against the os in the hope of speedily arresting the flow; failing in this and having some tincture iodine at hand I armed my platinum cotton carrier and applied the iodine, but the hemorrhage was so profuse that it seemed to wash it away before I could reach the seat of injury; after several attempts to make the application effectual, and failing, I applied the tampon; this woman was not pregnant and the

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sound had not entered more than three-fourths of an inch beyond the internal os. A week later I ascertained by the careful use of a flexible probe that the uterine canal was free from polypus or growth of any kind. I was not aware at the time of any unusual resistance in the passage of the sound through the internal os. Of course such an accident as this must be exceedingly rare, and there could be no possibility of predicting its occurrence, but there are conditions which should restrain one from the use of the sound because of the known possibility of far more serious harm resulting. Yet it has been said "the dangers from the use of the sound have been frequently much exaggerated."

The patients who come to consult the physician about uterine and pelvic troubles, usually do so at a time when there is more or less pain or local discomfort referable to the pelvis experienced, and these are the cases where smoldering peri-uterine troubles are frequently found, and whether the danger of exciting anew old pelvic or uterine inflammation lies in the possibility of renewed infection or of indirect irritation and disturbance of the parts by too harsh manipulation, the sound should not be used, neither should its introduction be attempted when the internal os is not patulous enough to admit of its passage without force. I believe that in every case the physician instead of omitting a digital examination should first carefully interrogate the entire pelvic contents by a thorough digital and bi-manual exploration, and if there is detected any œdematous points anywhere around the utero-vaginal junction, especially posteriorly or beyond in the cellular tissue, any points of tenderness with thickening appear, or the uterus is not freely moveable, in all such cases I believe the use of the sound is contra-indicated, as it can certainly give no essential information that cannot be acquired by a properly conducted bi-manual examination, or that will

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be necessary to the intelligent management of the case. The longer I practice the less frequently do I find occasion to use the sound or uterine probe. A well conducted digital and bi-manual examination will give in the majority of cases all essential information.

The second part of the inquiry comprised in our subject is of far greater import, as the irritative action of intra-uterine treatment is liable to be far more disastrous under certain conditions. I refer to the presence of smouldering troubles in the peri-uterine tissues, which are ready to break out into more or less violent inflammations upon the least excitation. Whatever opinion is held as to the causation of endometritis, subinvolution, and the often accompanying pathological changes in the pelvic cellular tissue, broad ligaments and pelvic peritoneum, there is no difference of opinion upon the liability of exciting old inflammatory exudates to renewed activity. I believe I can say that I never saw a case where there was any tenderness found anywhere in the peri-uterine tissues in proximity to the uterus, but that intra-uterine medication aggravated the condition, and upon one occasion I saw a most intense cellulitis and peritonitis develop within twenty-four hours after the local treatment, resulting in the formation of an abscess and a protracted sickness nearly costing the patient her life.

That catarrhal or so-called fungous endometritis with subinvolution is always to be met on the spot by intra-uterine medication at the hands of the physician I do not believe. The general practitioner too often regards these as the prime factors to be dealt with at once; but let us stop for a brief statement of the different views held as to the mode of origin of endometritis and peri-uterine inflammations, and the conditions usually present, and what they should teach us.

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Whether one holds the opinion that endometritis is always a primary trouble and the changes in the uterus and peri-uterine tissues are secondary, or whether the primary departure is in the circulatory system of the pelvis, and venous stasis causing pressure upon and atrophy of healthy tissues with lowered arterial tension and lessened arterialization, and in consequence local denutrition of the pelvic organs, resulting eventually in multiparous women in post-menstrual subinvolution, and in parous women in arrested involution; or whether the majority of cases occurring in parous women result from localized infection through abrasions of the endometrium and through lacerations attendant upon labors and abortions, he must ever remember the inter-dependence existing between the various pelvic organs and tissues, and I believe that very similar or like conditions may ultimately arise by the various modes of origin above enumerated.

All cases, however caused, can be for convenience grouped into two distinct classes. Those in which there are no traces of old or recent inflammation to be found in the peri-uterine tissues and those in which they are present in varying stages. The endometritis may be considered primary in the former and the intra-uterine treatment may be commenced at once, with a prospect of success. The object sought being to destroy the fungous tissue of the endometrium and by irritative action induce contraction of the uterine muscular fibre, thus relieving the venous stasis in this organ and inviting a fresh supply of arterial blood to the parts, this healthy influence will, it is taught on good authority, extend to the surrounding parts. But in the other class of cases the conditions are different, the presence of this enemy in the background must be heeded, the discharge of mucus pouring out of the uterine mucosa in *these cases*

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must not be suddenly arrested; it means a constant unloading of the engorged and over-distended venous system of the uterus and neighboring parts. To arrest this discharge suddenly by the application of any powerful styptic or caustic agent would be to close the only avenue the already over-gorged vessels have of unloading themselves, and the only result the awakening of the slumbering enemy in its peri-uterine fortress.

Intra-uterine treatment in these cases should, *if employed at all* in their management, be preceded by the use of copious hot water injections, supplemented by vaginal or rectal suppositories if need be, using such agents as iodide of lead or potassium, stramonium and opium, &c., or glycerine, tannic and boracic acids may be employed by aid of the cotton tampon, and after every trace of peri-uterine tenderness has disappeared the intra-uterine medication may be pursued, still keeping up the hot water injections.

You will observe that I say *may be pursued*, for the longer I practice the more am I in favor of restricting intra-uterine medication to uncomplicated cases, wholly withholding it especially in those cases accompanied by cervical lacerations, as the hope of permanent relief by this method of treatment in these cases is futile; but I still believe that in those cases where there are no remains of peri-uterine inflammatory trouble found, and in others not accompanied by extensive laceration of the cervix or perineum, where they are found and are promptly relieved by the preliminary treatment, that intra-uterine medication may be pursued with a prospect of success, but it requires the exercise of thoughtful care and trained judgment in deciding to pursue intra-uterine medication even as supplementary treatment in this class of cases. The point I wish to insist upon is that it should never be employed in the initial treatment except

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in uncomplicated cases, for it is almost certain to cause serious trouble either by direct irritation or by too sudden arrest of the uterine discharge, which I look upon as a source of relief to the venous engorgement.

DYSMENORRHEA.

J. C. ADAMS, M. D.

If the general practitioner will carefully read our text books with the view of gaining clear conceptions of this disease and the best methods of treating it, he cannot fail to come to the conclusion that gynæcology has not yet fully emerged from the stage of empiricism to that of comprehensive, definite, clearly formulated doctrine. This warrants any intelligent and thoughtful physician in giving his facts and opinions, even though the latter be held only tentatively as the best explanation of existing knowledge as he understands it. The very word dysmenorrhea implies that there is something wrong with the process. Back of this lies the question, is menstruation ever normal? No and yes.

If we regard woman merely as an animal, free and able to indulge her sexual desire, the order of events is the following: The sexual organs having attained to maturity, a fecundated ovum lodges in the fundus uteri near the fallopian tube by which it has entered. The endometrium, invigorated by its presence, becomes hypertrophied and forms with it a vital connection. The uterus and ovum grow simultaneously, until the former has reached its limit and the latter is ex-

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pelled. This event is succeeded by lactation, and the latter, in due time, by a second impregnation; and thus the parturient cycle revolves. This is the purely animal succession of events.

But because woman is more than an animal; because she has æsthetic and intellectual needs; because divine and human laws impose self-restraint, the prevenient care of nature has interposed an abortive process which moderates passion with little or no necessary injury.

A recent writer has sneered at the Levitical ordinance that implies the sinfulness of menstruation, but those who look deeper into the matter see in this a confirmation of the opinion of the naturalist that menstruation is not *order*, but *disorder;* not nature, but an aberration from nature. If insemination should not take place, the germinative membrane constituting the endometrium, having grown to the extent of filling the uterine cavity, and being subjected to pressure, undergoes fatty degeneration and exfoliates, leaving bare and bleeding the capillary network that traverses its tissue. The detritus is expelled by the elastic pressure, *i. e.*, the tonic contraction of the uterus, the same kind of contraction as that which brings about painless involution in the empty uterus of a healthy primipara. Simultaneous with the growth of the endometrium is a slight growth of vessels, lymph spaces, uterine glands, and muscularis. Beginning with and sustaining the growth of the germinative membrane of the ovarian cortex and the endometrium, a tide of nutritive vigor sets in, manifesting its presence by increased arterial tension, slight elevation of temperature, augmented nitrogenous metabolism as indicated by greater elimination of urea. This rising tide reaches its highest point, presumably, at the moment of the menstrual crisis. The decidua menstrualis being probably

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anemic, on its internal surface undergoing fatty degeneration, and pressure by a muscularis tense from distension, its capillaries rupture at the weakest point, that is, in the loose stroma in which the glands are nested. The engorgement of the endometrial plexus is sustained up to the moment of rupture by a reflux venous current from the peri-uterine reservoirs. This reflux current is occasioned by the rise to its highest point of the arterial tension, and is rendered more effective by the fact that the veins of the endometrial plexus are few and small compared with its arterioles.

We thus learn that three factors are operative in that process of growth which ends its cycle in normal menstruation: (*a*) Sufficient nutritive vigor; (*b*) sufficient arterial tension; (*c*) a uterus with a muscularis capable of expelling its detritus by mere elastic pressure, that is, by tonic as opposed to clonic contraction.

Conversely, the defects involved in dysmenorrhea are: (*d*) denutrition; (*e*) deficient arterial tension; (*f*) a muscularis unable to expel its detritus by elastic pressure.

I have no doubt that in the vast majority of cases of dysmenorrhea that begin in early girlhood the predisposing causes are constitutional: a scrofulous or neurotic constitution, an imperfectly developed or deformed uterus. The body as a whole is badly nourished, with feeble muscles and an unstable nervous system, and would it not be strange if the reproductive organs did not share this debility? When we take into consideration the fact that the reproductive function is supra organic, that it looks supremely to the being and well-being, not of the individual but of the race, is it strange that in the struggle for existence the individual should have precedence of the race, and that the physiological processes concerning the latter should fail first?

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In the feeble girl the first menstruation may find all the conditions of the normal process absent,—nutritive vigor wanting, arterial tension low, the muscularis atonic. Menstruation having taken place, involution is imperfect. The elements of disassimilation are in part retained; the peri-uterine and uterine plexuses and veins remain too large; the uterine cavity has been slightly enlarged by the clonic contractions necessitated for the expulsion of its contents. Hence, the environment remaining the same, the next menstruation finds a thicker endometrium and a weaker muscularis.

The inter-menstrual engorgement of the venous radicles gradually invades the parenchyma. Uterine catarrh, development of the inter-glandular embryonal elements, invasion of the uterine glands by leucocytes from the lymph spaces, proliferation of the uterine glands, œdema and hypertrophy of the muscularis, and finally contraction of the filaments of the stroma in which the glands are imbedded, resulting in atrophy of the latter and converting the cavity into a pus sac studded over with non-vascular granulations, follow in pernicious succession.

Briefly, we may have a catarrhal, purulent or croupous endometritis as progressive stages of the same process. It is evident that these inflammatory changes must have an adverse influence on the menstrual process by thickening the fine filaments of connective tissue that form the stroma in which the glands are imbedded, upon the rupture of which exfoliation of the endometrium depends. The venous engorgement and œdema of the muscularis from chronic endometritis has likewise diminished its elasticity. Thus, while the resistance has been gradually increased, the power to overcome it by normal contraction has diminished. Tenderness on pressure and painful irradiation mark the extreme of inflammatory changes.

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The mental and physical strain to which young girls of the well-to-do classes are subjected by the duties of school and the exactions of society, and the hard work imposed on a less fortunate class, at a time when the reproductive organs are just beginning to funciate, has an adverse influence on involution and germinative growth.

Dysmenorrhea has been divided and subdivided into many varieties, but I believe three, nervous, obstructive and inflammatory, will comprehend them all. Each of these is held to the exclusion of the others as the prime pathological condition. The difficulty with each is that it does not cover all the cases, and can be disproved negatively. Take the neurotic theory of Mathews Duncan. Many women notably neurotic do not have dysmenorrhea, and neuroses do not occur with exact periodicity over years, and are wont from time to time to change their seat.

Try the theory of obstruction. We may have a pin hole os and narrow cervix, and yet normal menstruation. Conversely, we may have a patent os and wide cervix with dysmenorrhea. We may have extreme flexion without dysmenorrhea. We may have flexion with dysmenorrhea, and relieve the dysmenorrhea without correcting the flexion. We may correct the flexion without relieving the dysmenorrhea. This by no means implies that flexion is not an adverse element in many, I may say in the majority of cases of dysmenorrhea, but only that it is not the fundamental element.

Test the proposition that endometritis is the controlling, essential factor. This disease exists in perhaps every case in reference to which the physician is consulted, but the severest pain occurs in young neurotic girls in whom the endometritis is incipient, and the severest endometritis and endo-cervicitis in cases in which there is no dysmenorrhea.

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An hypothesis which would cover all the pathological, clinical and therapeutic facts would be, to say the least, a good working hypothesis. Accordingly, with the modesty that becomes a parvenu, I formulate the following: In every case of dysmenorrhea there is a disproportion between the elastic retractile force of the uterus and the provision for the exit of its contents, and in this disproportion originates the clonic contractions—so-called spasms that characterize the disease. Hence the indications are two: To enlarge the outlet and invigorate the muscularis, and thus restore the equilibrium of power and resistance. The enlargement of the outlet being the most urgent indication, and a necessary prerequisite to the treatment of co-existant endometritis, has been practiced equally by the boldest and most conservative gynæcologists from Sims to Byford.

Four methods are in vogue; 1st, slow, gradual, moderate, dilatation; 2d, immediate and extensive dilatation; 3d, incision combined with dilatation; 4th, incision alone or combined with suture, for restoration or covering in of partially or totally amputated cervix. The first of these methods is adapted to recent cases in which there is not marked flexion, and uterus is soft.

Within the last twelve years I have treated eight cases in this way, using elm tents generally followed by local medication of the endometrium weekly during two or three intermenstrual periods, and then if practicable, once or twice more just before the period. They were all young recently married women. Six became pregnant within two years. Two remain sterile but relieved of the dysmenorrhea. These latter were both cases of retroflexion. With the method by rapid extensive dilatation I have no experience. It seems to me adapted to the treatment of such cases as I have treated

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by milder means when the desire or circumstances of the patient require a quicker cure.

In anteflexion of the cervix with a soft uterus the choice is between rapid dilatation, the posterior incision combined with dilatation or Abbott's operation.

I treated one case in a young woman, two years married and sterile, who had always been a sufferer from time of early girlhood, by the posterior incision, superficial incision of internal os, and dilatation of the latter. The only disagreeable result was a severe hemorrhage due to the fact that the patient sat up and exerted herself on the seventh day contrary to advice. Pregnancy and abortion at the fifth month was succeeded by a pregnancy that went to time.

Of the severer cases with chronic endometritis, anteflexion and rigid tissues I have had none; but on general principles forcible dilatation seems contra-indicated.

Although sclerosis is not a pathological feature of a multiparous uterus, yet the rigid muscularis yields with difficulty and may tear, as witnessed by Goodell himself. For this class of cases the posterior incision with dilatation of internal os as practiced by Wile of New York, or the operation introduced by Dr. A. W. Abbott, of Minneapolis, is indicated. This operation straightens the flexed neck; brings the axis of cervix into line with that of the body; leaves a closed and not an open wound; a restored and not a mutilated cervix. The second indication to invigorate the muscularis is fulfilled by such local treatment as removes existing endometritis. To this the dilatation itself largely contributes by giving easy vent to morbid secretions. To the local treatment should be added such general measures as improve the nutrition of the whole body.

I conclude with the proposition that the proximate cause

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of the paroxysm of dysmenorrhea is disproportion between elastic pressure or tonic retraction and provision for escape of uterine detritus, and that the curative indications are to restore the equilibrium of power and resistance.

GALACTOCELE, WITH REPORT OF A CASE.

S. W. RANSON, M. D.

Of the many neoplasms of the female breast, cystic tumors form but about two per cent. Of several varieties of cystic tumors, galactoceles are the rarest. Hence I do not report this case, because of anything new, novel or brilliant in its treatment; or because of anything especially dangerous in the disease; or because of any glory I have or expect to receive from it, but simply to put on record a case, which from the literature of the subject, I am led to believe, is exceedingly rare.

Most cases of galactocele are due to obstruction of the lacteal ducts, causing a retention of that secretion and distention of the ducts, sinuses and gland structures. Hence it is a disease incident to lactation, and, for the more part, to the early months of lactation, though cases have been observed at other periods of life. They contain normal fluid milk, or inspissated milk, in greater or less degrees of solidification, mixed in some cases with epithelial scales. Usually the tumor affects only the portion of the gland involved in the obstruction, the other portions performing their normal functions.

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Mrs. P., Scandinavian, age 21, primipara, good physical development, was delivered November 22d, 1888. I saw her first December 14th, twenty-two days after delivery. Found her propped up in bed, supporting with a sling around her neck and shoulders, her enormously enlarged left breast.

Percussion revealed fluctuation; the fluctuation was alike all over the tumor. I withdrew a hypodermic syringe full of the fluid, which proved to be pure milk. There was no discoloration of the skin, no pain or tenderness, only inconvenience from its bulk and weight. There was no enlargement of the axillary glands. Her temperature, pulse and respiration were normal. Since her confinement she had had no chills, fever or pain in the breast; hence there could have been no mastitis, and no apparent recent obstruction of the lacteal ducts. I withdrew with aspirator, 59 fluid ounces of pure milk. There was no sediment, flakes, pus or blood. The needle was introduced but once—was not changed in position, and the sac was entirely empty; and through its thin walls I could distinctly feel the gland in its normal position, entirely devoid of adipose tissue. Its different lacteal ducts, with surrounding gland structure, could be plainly outlined. The sac was entirely loose and separate from the gland, except at the nipple, the tissues of which seemed stretched into a mere fibrous band.

From her parents I learned that Mrs. P. was born with an enlarged left breast. It was oval, soft and fluctuated; and, to use her mother's words, felt as if it contained "wind or water." Its size was sufficient to attract general attention. This enlargement or cystic character of the breast continued for a long time—at least a year. There was no inflammation at any time during this period, and no fluid ran or was pressed from the nipple. The cyst contents finally absorbed, leaving this breast considerably enlarged.

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This preponderance in size of left over right breast continued until puberty. At this period, the right breast began to enlarge, and went on until it attained normal size and shape. The left breast also grew somewhat, but remained flat and firm to the feel; so that, from the period of puberty to that of pregnancy, the right breast was very materially the largest.

Soon after pregnancy—as early as the third month, and perhaps a little before this period, the left breast began to enlarge and assume a cystic character. This enlargement was gradual at first, but as pregnancy advanced, it went on more rapidly, and during the last month, it attained a size which made it burdensome to carry.

After delivery, the child not being able to nurse on account of the flattened, retracted character of the nipple, a breast pump was applied, which from time to time withdrew considerable milk—at one time more than a quart. But finally their efforts in this direction failed, and here my connection with the case begins.

After aspirating I applied belladonna ointment and a large compress of cotton, and over this, a roller bandage, firmly compressing the breast. I also put her on iodide of potassium internally, withdrew, as far as possible, fluid nourishment, and directed that the child should be witheld from the right breast as much as was consistent with the safety of the breast. From December 14th to 29th, I aspirated four times, and withdrew, in all, 210 fluid ounces of milk. Finding that my efforts to dry up the secretion in the gland without suppuration in the cyst was likely to fail, I introduced a trochar, and through the canula, a drainage tube. Soon after this, suppuration set in in the sac, and with the discharge of pus, the secretion of milk began to diminish.

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I now commenced to irrigate the sac once or twice daily with a two per cent solution of carbolic acid, and placed her on tonics. The case progressed favorably; suppuration was maintained at a minimum; granulation and closure of the sac began, and as she did not return, and I had instructed her to continue this treatment until suppuration ceased and the sac was closed, I supposed the case cured.

A few weeks ago I looked up the case to find its present condition and learned that shortly after ceasing to come to my office she ceased to irrigate the sac with the antiseptic solution. Profuse suppuration followed; several fistulous openings formed in the lower portion of the sac, and in this condition she applied to Dr. Knute Hoegh, of this city, who very properly excised the lower portion of the sac, treated it antiseptically with the result of speedy and complete cure. At the present time the walls of the abscess are firmly united to the mammary gland and chest walls, and from the nipple can be pressed a few drops of milk.

Pardon me if I theorize a little in regard to the etiology of this case. The mammary glands can be first observed about the third month of intra-uterine life. They are highly vascular; so active is their proliferation and development that in some cases it takes on a pathological rather than a physiological form. That the lacteal secretion is not wholly dependant upon the stimulation of pregnancy has been thoroughly established. Many cases are on record of men and of girls before the age of puberty, and of old women after the meno-pause, who have placed infants to their breasts, and the stimulation of nursing has developed an abundant secretion of milk. Many cases are on record of infants, both male and female, in which immediately after birth the mamma has become swollen, tense and inflamed,

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and in some of these a fluid closely resembling milk has run or been drawn from the nipples.

As there is only a step between active, normal development and the hyperemia of secretion, what wonder that nature sometimes overdoes her work and carries the process of development on to the stage of secretion, or even farther, to that of inflammation.

Kolliker, as quoted by Billroth, says: "The most striking appearance to be seen in all glands, though to a less extent in boys, is the ectasia or dilation of a now large, now small, number of gland ducts, so that they present a considerable lumen from their external opening to their terminal bulb. The above described ectasia of the milk ducts begins in the first week of life and frequently goes on to pronounced parenchymatous swelling which may present the appearance of mastitis, with great dilation of the ducts, so that the whole gland has the appearance of a cavernous organ. Glands of this character are scarcely ever developed normally afterwards, and the faulty development of the breast in otherwise well developed women is very probably due to the mastitis of childhood."

In conclusion let me say that this case is exceptional and rare because, first, its incipiency and development was intra-uterine, and therefore can be termed congenital.

Second, the distension of the ducts and sinuses was so great as to cause rupture of their walls and pouring out of their contents into the capsule of the gland; and this condition was so long continued as to leave permanent openings between the sinuses and capsules.

Third, when normal activity of the gland began as the result of pregnancy, the secretion was poured out into the capsule, thereby distending this membrane and making a well-formed galactocele several months prior to delivery.

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Fourth, the limits of the size of this cyst, had non-interference been practiced, would have been the limit of the expansibility of this capsular membrane and its integumentary covering.

Fifth, after careful and diligent, though by no means exhaustive, research of the literature of this subject, I am able to find but one case that in any considerable degree resembles this of mine. That is the case of Scarpa, which began ten days after delivery, was not interfered with for two months, reached a circumference of thirty-four inches and extended down to the thigh, from which ten quarts of pure milk was evacuated with a trocar.

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OBSTETRICS.

A. B. CATES, M. D., CHAIRMAN.

THE MANAGEMENT OF A RETAINED PLACENTA.

C. G. SLAGLE, M. D.

This subject has been suggested to me by a number of communications from various parts of this country which are just now being published in the *Medical World*, which seem to be in response to some physician who solicited an exchange of views of medical men in regard to the proper management of a retained placenta, especially before the fourth month of gestation.

I shall here take it for granted that the proper management of a placenta which is not voluntarily expelled, after an ordinary labor at or near full period, is now pretty generally understood, at least by all physicians who have had a little experience, and that a rule for that can be readily formulated, as follows:

If the placenta is simply lodged (i. e., detached and retained, from its size, position or from mere inertia) within the uterus or vagina, it will generally be an easy matter to

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deliver it by a little traction of the cord, and gentle manipulation over the uterus; or as sometimes happens, especially if we have given ergot just prior to the passage of the child, the os uteri has closed and shut up the placenta within the body of the organ. In this case we have only to gently dilate the os, or if resistant, administer a little morphia hypodermically, which will generally dilate it within an hour, after which it can readily be secured. Occasionally it will be found, as Prof. Meigs has well said, simply "buttoned" across the mouth of the uterus, and can readily be "unbuttoned" and extracted with the fingers.

But suppose we have it, as we may have reason to know, yet not entirely detached from the surface of the womb, after the child has been delivered say one-half to one hour, and the uterus is in a state of partial or complete inertia, (there being yet no considerable hemorrhage) shall we wait longer on nature or give ergot.

As a rule, it will be unnecessary delay to wait longer; we may give ergot if the os is open or patulous; as soon however, as we see the slightest effect of the ergot, generally twenty to thirty minutes, we may try gentle traction on the cord and "Credes method" over the uterus, and if not successful within half an hour at this, introduce the hand (after thoroughly cleansing and disinfecting it) and take the placenta.

This is a good general rule, the exceptions being where there is dangerous flooding, convulsions, or other imperative symptoms which demand more prompt action; in such cases introduce the hand at once and extract the placenta, after which give a large douche of hot water (either with or without astringents) into the vagina.

This seems to be the course now generally pursued by conservative practitioners, and I cannot think of any circum-

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stance which would justify a physician in leaving his or her patient after confinement until the placenta has been delivered; that this is especially true in "country practice" I think no one will gainsay, and that it is equally correct in "city practice" I cannot doubt; indeed I hold that any physician who would venture to leave a patient after confinement (or delivery of the child) and before securing the placenta, could and should be held responsible in case of resulting accident in any manner to the patient.

This much in general for the management of the placenta in ordinary labor, and upon which I presume we will not materially differ; but the question of the proper management of a placenta after abortion (or miscarriage), and especially during the early months of pregnancy, the period at which most miscarriages occur, say before the fourth month, presents to us quite a different aspect and seems to afford a diversity of opinions among medical men at the present time; and this like many other departments of an art, is a subject upon which it is difficult to formulate universal rules for the guidance of others, or at least our "rules" if formulated would be varied by so many "exceptions" that they would be of little value except in a very general way to inexperienced physicians.

If we should say individualize your cases and treat them each "pro re nata," the precept could certainly be orthodox, still some general principles here expressed seem necessary for our guidance, while much must remain for the individual judgment of the practitioner, as the various aspect of the cases present.

I doubt not the older members of the profession will bear me out in asserting that it is here that we will find more useless and even pernicious "meddlesome midwifery" than

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anywhere else within the whole range of this department of medicine.

Some of us (and I wish it were all of us) have at length learned by practical experience that all women will not die, even if we fail to turn them wrong side out or scrape the womb out and douche with disinfectants to secure the placenta at once in these cases; and I only assert what I sincerely believe when I say that ten women are hurt and abused by meddlesome interference here for every one that would be harmed if the placenta was let alone until nature makes a proper effort to relieve herself. "Imprudent haste" to secure the placenta in these early miscarriages, I say, is but too common and pernicious.

I freely confess that up to within a few years I worried, fretted and meddled a great deal when I had a placenta retained after those early abortions, but after witnessing the result of several which it seemed impossible to secure without resorting to violent and dangerous means, I began to suspect that they were not generally so dangerous after all if let alone until nature made a reasonable effort to expel them; and especially (as is so often the case) when there is no great inconvenience or pain to the patient, or much bleeding, and no offensive discharge after a few days waiting; and these symptoms, by the way, should be our guide to prompt interference, (i.e., pain, hemorrhage, and later, offensive discharge,) but if neither, as there often, yes, generally, will not be, I believe a reliance on the natural forces up to a time when nature will surely make an effort to expel it, is conservative practice, and will far less often result seriously than will those determined and hasty efforts so often made by practitioners. I have seen a number of placentas retained (after miscarriages) for several days, and even for

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three or four weeks, in a few cases, and at least one for five months after the fœtus passed, without any untoward result in a single case, while during the same period have known several females who suffered very serious consequences from forcible dilation, curetting and other violent manipulations to secure a retained placenta.

I do not mean to be understood to say that no effort whatever should be made soon after the fœtus passes to secure the afterbirth, but I do say that those efforts should be only very mild and conservative in most cases, rather than violent and persistent as if the woman's life really depended upon getting it away at once. Neither shall I endeavor to claim that a woman's condition is not far safer and better after the placenta has been secured than while it is still retained, but rather that the risk in leaving it (after a reasonable effort to secure it) is far less than that of forcible extraction.

In support of these views I am very glad to be able to quote from a very recent and standard authority on this subject as follows: "It is a curious and interesting fact that the retained placenta in cases of abortion does not (as at the full period of gestation) undergo decomposition, and therefore if it cannot be readily secured, should as a rule, cause no great disquietude, as it will often pass off spontaneously, even after all efforts to remove it have proved unavailing." (I think I am quoting Playfair.) I am pleased to find such endorsement from such authority, for views which thirty years of active practice have so often verified, and I believe that every young physician would do well to post those views in some conspicuous place for frequent reference, and govern his practice accordingly. It will save him so much needless worry, and often needless suffering and torture of his patients.

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Within a little more than a year I have reported to the "Hennepin County Medical Society" a case of retained placenta where the fœtus passed off at three months without pain or hemorrhage, and not followed by signs of decomposition, which I had an opportunity of watching for five months, when nature made the first and a successful effort to throw it off, retained five months after the fœtus passed.

During the discussion of my report the question was asked whether I was not afraid of septicæmia in trusting the case thus long to the "expectant method," and I could cheerfully respond not in the least, from the facts that the woman had remained perfectly healthy during the period of retention, had never suffered the least uterine pain, nor seen any blood, nor passed any offensive discharge from the vagina. And that from these observed facts I confidently concluded that the placenta was yet intact, and not detached at all from the uterine surface; hence there could be no septicæmia in the case as long as these conditions existed.

I cannot conclude this paper more satisfactorily to myself than by quoting a page from the conclusion of that report to the Society.

"In thus faithfully reporting this rather unique case, I am painfully sensible of the fact that I have laid myself liable to your criticism for my persistent non-interference; but I can only anticipate you by answering you that had I another case precisely similar (though I certainly never expect to see another such) I would be much inclined to manage it much as I have done this one, even at the risk on the one hand of having the case pass from me into the hands of what I might deem a less conservative practitioner, and on the other hand of being criticised by the younger members of our profession as an unscientific and careless innovator."

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I am, however, much inclined to believe that as we grow older and more experienced in this department of medicine, we are more and more disposed to make such innovations on what was at least formerly the current teaching of our schools, and even feel pleased to find that results generally sanction what we have thus done in a rather unorthodox manner.

PUERPERAL PERITONITIS AND SCARLATINAL POISON.

SAMUEL FLAGG, M. D.

While it is generally acknowledged that erysipelas may give rise to puerperal fever, our knowledge of the effect of poisons of other zymotic fevers on women recently delivered is not as complete, or our instructions as to conduct as clear and authoritative.

Some years ago, in the first discussion as to the nature and origin of the various forms of metria, many held the opinion that nearly all zymotic diseases were capable of originating puerperal fever.

Spencer Wells asked if there had ever been seen a case of puerperal fever which was not a case of "*scarlatina* or rubeola, or erysipelas, or traumatic fever caused by bruising the parts." Barnes seems to think the lying-in women especially predisposed; Prissey advised abstaining from obstetric practice while attending cases of scarlatina.

Matthews Duncan and other prominent obstetricians gave the same advice, and one says he "never conveyed puerperal

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fever but once, and that he ascribed to a case of scarlet fever, and has since refused to attend cases of the latter disease."

Lusk did not find any relation between the deaths from metria and three zymotic diseases, viz., scarlatina, diphtheria and erysipelas, but suggests such a connection in individual cases.

In a recent paper in Transactions of the London Obstetrical Society, Dr. Robert Boxall infers, from an analysis of sixteen cases, that scarlatinal infection during lying-in period may give rise to such local and general lesions as are produced by ordinary septic poison. The article on puerperal fever in "Cyclopedia of Obstetrics," etc., notes the liability of poison of scarlet fever to cause inflammation of the peritoneum and pelvic organs.

The following case may be of interest, and show relationship between poison of scarlatina and peritonitis affecting lying-in women:

Mrs. ———, aged 40 years, considered herself about four and a half months pregnant, and thought had felt motion one week ago. She is the mother of six children, and during this supposed pregnancy had on several occasions had bloody discharge, unaccompanied by pain.

I was called April 12; found her flowing quite freely and having severe expulsive pains. She was delivered of a large fleshy mole, containing a small cavity lined with the amnion. Delivery was followed by but little hemorrhage or pain.

Scarlet fever prevailed in the house at the time, and had done so for over two weeks, two children ill with scarlatina occupying a bed in her room when she was taken sick, while two others were convalescent. Ventilation was defective, and but small opportunity afforded for isolation or antiseptic methods.

Evening of 13th, thirty hours after delivery, she had a

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severe chill, lasting over an hour. Temperature reached 104°, pulse 126; pain of very acute character existed over entire abdomen, which soon became greatly distended, and these symptoms were attended by mild delirium.

Morning of 15th she complained of sore throat, and moderate redness of pharynx, arch and pillars of palate was noted.

On the 17th an eruption was observed on face, chest, upper part of abdomen and arms. It consisted of slightly elevated papules about one-tenth of an inch in diameter, of brownish-red color, circular, firm to the touch, about two inches apart, intermediate skin not being discolored and a large majority of the papules seemed to have coalesced in pairs, the semi-diameter of one lying over that of another so as to present a figure of 8 or dumb-bell appearance.

They had quite disappeared at end of forty-eight hours, nothing marking their site but a few scales of dried epithelium, and there was no desquamation of intervening skin.

The day the eruption disappeared both breasts became firm and contained milk.

The patient made a good recovery.

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NERVOUS DISEASES.

LIZZIE R. WASS, M. D., CHAIRMAN.

TUMOR OF THE BRAIN.

MARY S. WHETSTONE, M. D.

Miss W., American, age 34, teacher. Family history: Cause of mother's death unknown; father subject to attacks of intense sick headaches, died from an injury; an only sister is exceedingly nervous and hysterical.

Patient gave the following history: During childhood had "salt rheum and catarrh." Menstruated between 12 and 13; amount moderate, color dark, with clots sometimes present; painful at the beginning of flow. Recurrence normal until age of 25, when they became irregular and ceased entirely when she was 29 years old. Has had attacks of severe pain in head at intervals for several years preceding this one.

Nov., 1885. Patient said she began to have a tired feeling in the head which prevented sleep.

Dec. 10. Commenced to have an almost constant feeling in basilar region as if it would fall away unless supported by the hand.

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Dec. 18, A. M. Was very restless; felt as if some one was about to catch her from over the shoulder and had an inclination to turn about. Left hand and foot cramped. Soon after fell unconscious to the floor and foamed at the mouth. When consciousness returned, had an intense pain in the right posterior occiput, quieted only with large doses of morphia. This ceased after a few days and she was able to go to her home in Dakota, but continued to have a tired, uncomfortable feeling in the basilar region.

Jan. 5. Returned to teaching.

Jan. 24. Experienced difficulty in keeping her equilibrium, feeling as if her feet would fall from under her. Later she became prostrated and semi-unconscious. During one week felt better.

March 3. Was taken with a frontal headache. Next morning had another epileptic attack, succeeded by unconsciousness for one-half hour. Pain in the basilar region more or less intense at times. She recovered from this, was able to be up and do light work, and subsequently entered upon her duties as teacher, but was forced to give them up. During all this time she was under various forms of treatment, including mind cure and christian science, without any appreciable benefit.

March 26, 1886. I saw the patient for the first time. She was suffering from sleeplessness and intense pain in the occipital region; sometimes in the eyeballs or temples, or all through the head, mostly on the right side. Bowels constipated; little appetite; very talkative and nervous. Temperature 100°, pulse 80. Nothing of a specific history was obtained. Nerve sedatives gave little relief. Gave one grain svapnia or one-half grain codia, as needed, to quiet pain and secure sleep.

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Drs. House, Hunter, Wells, Lizzie Wass and Mary Hood saw the patient with me from time to time. A diagnosis of tumor of the brain was made, and agreeable to such a diagnosis iodide of potassium in ten grain doses was administered, increasing dose one grain daily.

March 30. Slight delirium and when conscious, complains of more pain.

April 2. Sat up in chair twenty minutes.

April 4. Much pain in right temple. Discontinued iodide potassium because it disturbed the stomach. Little anodynes and more nerve sedatives have been given for past ten days with apparent benefit.

April 14–15. Pain in temple and behind ear increasing in violence. Gave one grain codeia every two hours and applied dry cups at base of brain, but with little relief.

April 16. Sat up twenty minutes and dictated a letter.

April 19. Pain in occiput and top of head; repeats, "I am in such agony." Temperature 100.2° F., pulse 60, respiration 15 to 30.

April 20. Slept all night at intervals of 15 to 20 minutes and then had no pain. Awoke complaining of head being sore and tender to the touch.

April 21. Pain in back of neck.

April 22. Pain in the temples and top of head, increasing in violence.

April 23. Awaked but once during the night. Feels exhausted and despondent, and sometimes is delirious. Great pain in the head.

April 24. Slept all night. General pain in the head, relieved by a hypodermic of water. When sleeping is delirious, and breathes heavily and moans.

April 25. Temperature 96.4°, pulse 72; P. M., temperature 100.8°, pulse 94.

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April 26. Moves left hand frequently; seldom speaks. Heavy, blowing respiration; semi-unconscious and face flushed; involuntary urination. Puts her right hand at back of the head repeatedly. Roused and said she was in terrible agony. Temperature 100.4°, pulse 90, respiration 19 to 20.

April 27. Talked more rationally; complained of pain in both extremities. Does not move left leg. Used Faradic current of electricity on them; right responded readily, left imperfectly. Speech thick and incoherent; partially unconscious all day. 10:45 P. M., could not rouse her. Breathes heavily and swallows imperfectly.

April 28. Breathing more regular and articulates distinctly and is conscious. Voluntary urination and defecation; excessive pain in the head. Eats with a relish.

April 29. Waked with severe pain through the body and in the temples. Slight twitching of the fingers and moans in the sleep. Is thirsty and hungry much of the time.

April 30. Turned twice in bed during the night without assistance. Great pain in the temples. Raised left hand to the head three times. A little delirious; moans and cries out in sleep. Difficult breathing.

May 1. Restless, cannot get into an easy position. Great pain in the temple. Very thirsty. Temperature 98.4°.

May 2. Great pain in entire body, especially in right ear. Respiration 15 per minute and irregular. Temperature 99.2°, pulse 76. Quiet, passes hand across forehead frequently and moans in sleep.

May 3. More quiet, awakened with difficulty, does not talk, sighs frequently. Right pupil more dilated than the left. Involuntary urination.

May 4. Partially conscious for a few moments, restless, cheeks flushed, tries to talk but cannot.

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May 5. Temperature 99.7°, pulse 67, respiration 17, face greatly flushed, heavy breathing. Mouth partially open, entirely conscious. Voluntary urination. Pain in the legs and back of the neck. Quieted with a teaspoonful of water. Moves left leg a little but with pain.

May 6. Pain in the left parietal and right temple. Slept five hours.

May 7, A. M. Chilly. Raving; talking wildly and incessently. Speech thick. Involuntary urination. Ate with a relish beefsteak, brown bread, peaches and cream, and cup of cocoa and juice of an orange.

May 7, P. M. Sleeping quietly.

May 8. Awake, chilly, tired and very sick all over. Pain in temples.

May 9, 10, 11. Ate full meals. Much pain and restlessness.

May 12. Speaks of pain in right arm and is unable to turn on right side. Woke from sleep a little delirious.

May 13. Talked incessently for two hours. Pain in back of neck. Bowels constipated.

11:30 A. M. Became semi-unconscious. Roused with difficulty. Involuntary urination.

May 14. Moans in sleep and talks constantly when awake, feet cold, difficulty in swallowing. Blowing respiration. Slept quietly during latter part of the day.

May 18. Utterances indistinct, face red, temperature 99.8°, pulse 70, respiration 18.

May 19. Intellect dull. An attempt to swallow causes choking and vomiting. Is perspiring freely. Eyes partly closed when sleeping.

May 2. Quiet all night. Right temple back of neck and left leg aches. Talks in a whisper. Pupils dilate and contract. Involuntary urination and defecation. Ate supper of

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beefsteak, baked apples, juice of an orange and cup of hot water, and said she enjoyed it.

May 21, A. M. Passed a quiet night. Has difficulty in swallowing. Sleeps all the time when not roused.

P. M. Unable to swallow. Sometimes unconscious, eyes set. Lower lip purple. Perspiring freely, slight cough.

April 22. Quiet all night, temperature 99.6°, pulse 88, respiration 22. Cheeks flushed, perspires profusely, conscious and quiet, but does not sleep. Left hand cramped. Coughs.

May 23. Articulation very indistinct. Continues to take nourishment, but instead of swallowing will blow the food out and snores while eating.

May 24. Pulse feeble. Unconscious.

P. M. Died.

Autopsy was made by Dr. C. H. Hunter. Cadaver fairly well nourished. Membranes of brain very much congested, and vessels filled with dark fluid blood. No adhesions of the dura mater except about the Pachionian bodies, where some of the brain tissue was torn away in removing the calvaria. One ounce of serous fluid was found in the sub-arachnoid space. Slight adhesions of pia mater between the two hemispheres. Non-adherent in the left hemisphere. In right fissure of Rolando, pia mater much injected and only slightly adherent to brain tissue. In right sup. pos. hemisphere brain substance soft and depressed. Fissure of Sylvius free from clots and presents nothing of importance. Left ventricle dilated and free from serum. Brain substance of normal color and consistence.

Right side of posterior lobe of cerebrum and corresponding to the depression on external surface is an irregular mass of tissue, the center of which is yellowish in color, also found some grayish tissue scattered through it, and it is well

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supplied with blood vessels. But the whole mass shades to the normal color of cerebrum. The posterior surface of the tumor presents a greenish fleshy color. This same fleshy tissue is found in other parts of the tumor.

The tumor measures three inches anterior posterior, and two and three-fourths inches transversely. There is about one inch of normal tissue between tumor and base of the brain. Medulla normal.

TREATMENT OF CHOREA.

W. A. JONES, M. D.

The causes of chorea are numerous, but as this paper is supposed to treat only of its management I cannot but touch upon the causes.

During the past two years I have seen quite a number of cases of chorea, and the majority of them have been of rheumatic origin, either in the child or a rheumatic history in the parent. In about half of the cases scarlet fever was an exciting element, and these cases without exception were associated with organic heart lesions. One with acute endocarditis died very promptly, scarlet fever being the cause of the heart trouble; two cases from overwork at school; one case from eye strain, with high degree of refraction. The majority occurred at about the ninth year. Three out of twelve were right-sided cases, and in only two were there special facial movements.

The history of these cases is very important, especially the history of the mother.

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The treatment has not been routine. My first endeavor is to build up the nervous system, and cream has been the mainstay. If necessary I confine the diet to rich milk or cream until my patient is able to assimilate more food. Fresh air in abundance and cold spinal baths I find as soothing as any drug. I order baths night and morning unless I find it exhausting. In summer I put a thin dress on the child, turn him out in the garden, and as "Muldoon" suggested, "turn the hose on them."

I have tried the bromide and chloral treatment, but do not think it applicable in but a limited number of cases. I find that hyoscine hydrobromate will more effectually control the convulsive movements than the bromides.

I give small doses of hyoscine every two hours during the day until the patient is more quiet, then once or twice a day until convalescence is thoroughly established. It causes some dryness and inconvenience, but is preferable to the chorea.

I use arsenic, either the Fowler's solution or bromide of arsenic, in uncomplicated cases. Large doses should be given, as large as can be borne. Begin with 10 drops, then drop down to five, and run it up again to 15 or 16.

In the rheumatic cases an anti-rheumatic in the form of salicyl. compounds should be given until the symptoms abate, then use arsenic.

Many patients do better without any drug. In such cases I use daily applications of galvanism up and down the spine with the negative electrode from 5 to 9 M. A. strength.

Often a few treatments will cause a marked change, and then the patient goes on to perfect recovery.

Should relapses occur, as in rheumatic cases when the changes in the seasons come on, begin treatment at once, and thereby save time and expense.

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As chorea is allied to athetosis and mild epilepsy, the treatment will vary—no two cases can be treated alike—and the form of the attack will indicate to a certain degree the pathology. The chronic forms are apt to follow a specified course, and then we can more readily diagnose the seat of the lesion.

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DISEASES OF CHILDREN.

M. SULLIVAN, M. D., CHAIRMAN.

THE MANAGEMENT OF BRONCHO OR CATARRHAL PNEUMONIA, ESPECIALLY AS IT PREVAILS HERE IN INFANTS AND CHILDREN.

C. G. SLAGLE, M. D.

Having been solicited by our chairman of the Section on Diseases of Children (Dr. Sullivan) to contribute a paper on some subject coming within the domain of that department of medicine, I have concluded to choose broncho or catarrhal pneumonia for the present paper.

The importance of this subject has been suggested to me partly by the late prevalence of that affection in this city during the last six months, and indeed by its very common prevalence in this climate more or less every spring and fall, as also by some statements made in a very excellent paper on this disease by Dr. C. R. Keyes of Byron, Minn., published in the April 18th number of The Northwestern Lancet.

I have not investigated the statistics of this disease, but Dr. Keyes evidently has done so, and from his article I beg permission to quote as follows: "While this form of pneu-

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monia is not generally given as prominent a place in our text books as the acute lobar pneumonia, nor even generally considered a disease of such gravity by the laity, we nevertheless find that the per cent of mortality is stated to be considerably greater than in the other forms. The statistics giving the mortality of croupous pneumonia as about twenty per cent on an average; while in this catarrhal form, exclusive of the very mild cases, from thirty to sixty per cent prove fatal."

I must be permitted here to express my surprise at such statistics, as after my recent experience I cannot believe that this is necessarily such a fatal malady as here represented. I do not doubt that it is rather a dangerous affection if not properly managed, but I have generally found it quite amenable to treatment, as my records will demonstrate, having treated something over one hundred cases within the last six months of uncomplicated broncho pneumonia in infants and children (ages ranging from six weeks to fourteen years) without a single death. I say uncomplicated cases; by this I mean to exclude those cases which are complicated with measles, whooping cough, diphtheria, etc.

It is hardly necessary to suggest to the older members of the profession that in young and feeble children the vital forces must be supported and guarded from the very outset, and all depressing agents carefully avoided in the treatment, even though seemingly indicated to control prominent symptoms. I refer here of course to such agents as antipyrine, nauseants and debilitating evacuants. I feel that while this is good advice to follow in the treatment of all ailments, in the class of patients here referred to, I am now more than ever convinced that it is more important in the successful management of this affection than ever before realized by myself.

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I believe that my phenomenal success in the late epidemic has been largely due to the early and persistent administration of tonics and stimulants and well chosen nourishment, and the careful avoidance of all depressants even when seemingly indicated. If asked what particular form of tonics, stimulants, expectorants and evacuants and nourishment have been found most satisfactory to me, I would reply, elix. barks, or that happy combination of tonics found in "Fellows' compound syrup of the hypophosphites," even further combined with elixir lactopeptine; and for stimulants in early stages, wine, and later egg-nog; for expectorants muriate ammonia par excellence, often with syrup, sugar and prunus virgin. For evacuants par excellence, ol. ricini or castoria (combined, if the castor oil, with syrup rhei. aromat. et glycyrrhiz. to render palatable), and for nourishment, milk of course with lime water or some of the peptonoids.

Well, you are ready to say this is all sound so far as it goes and nothing new, but how will you control the finer, the nervous symptoms and the congestions, etc., of the lungs, as we have of course prominently in every bad case, elevated temperature, rapid and oppressed breathing, great restlessness or stupor with spasmodic symptoms, often harrassing and persistent cough, etc., etc. Well, I must declare that I know of no one simple remedy which will so well control all of these symptoms and save so much useless medication of a debilitating nature, as a properly prepared and properly applied linseed meal poultice, stimulated with mustard, to the chest, and continued, changing only when sour or dry once in eight to twelve hours, until these symptoms have been controlled, generally three to five days, and then followed by a good stimulating and anodyne liniment and chest enveloped with cotton battin for a week or more after the poultice is discontinued.

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Now, what I desire to emphasize in this treatment is this employment of poultice to the chest, early and properly, in every case that is at all bad; and I desire to be specific about this, at the risk of being deemed dogmatic and "old fogy." Are you going to order the attendants, not generally nurses, to get some flax seed and make a poultice, and put around the body, or the lungs, and change it every hour or so, when it gets cold? That has been the exact methods of many physicians in this city, as I have had abundant opportunity to ascertain.

Well, now, gentlemen, if that is to be your method, my advice is to let the poulticing alone; that is, omit it altogether in your treatment. Some of us, and I wish all of us, have learned that a poultice in such cases is like a body (all over, both); in others that it is a potent agent for good or evil, according as it is made and employed. I cannot, however, but express my surprise at Dr. Keyes' advice on this point, in paper already referred to. Excuse this criticism, Dr. Keyes, for I am sure I am right, and in this you are wrong. He says, "The chest may be protected by means of a layer of cotton, stitched inside the shirt so as to cover the lungs. This is preferable to a poultice, which is often used."

Now, while I freely admit that there is much good authority for this advice, I beg to protest against such practice. I have tried all methods during my twenty-one years service in this State alone, and can only answer you that such practice in this affection will inevitably lose many little patients that might be saved by properly prepared and properly employed poulticing.

But I anticipate you younger members who are ready to exclaim that the old doctor, like the Campbellite's water, makes a flax seed poultice a saving ordinance in this affec-

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tion. Well, gentlemen, I want to reiterate the assertion that in many cases—yes, the most serious cases—it is as nearly an indispensable agent to insure good success as I am acquainted with. The half dozen cases which have given me the most trouble, and which I came nearest losing in the late epidemic, were the very cases where, for certain reasons not well chosen, I endeavored to treat them without poulticing, using the cotton battin method of Dr. Keyes. Some years ago, in Winona county, I employed in some cases the oil silk jacket, recommended by many; and while I believe it to be far better than the cotton battin, it is far inferior, though more æsthetic and expensive, to the emollient linseed meal poultice.

Does any other material answer the place of the linseed meal, when not at hand?—poorly, indeed. Wheat bran, if skillfully handled, is perhaps the nearest substitute, but is not nearly as satisfactory. The oily nature of the meal renders it especially fitting for poultices; besides, there is no material known that can be handled so easily and so durably in a poultice. And yet if you simply, in haste, order the attendants to procure some flax seed meal, make a poultice with water and apply around the lungs—what will you almost invariably find at your next visit? Probably whole flax seed has been procured, or if the meal, it has been made with warm or cold water, instead of boiling water; it has been awkwardly put into some sort of cloth bag, and you find it lying down on the belly or off in the bed. If you ordered it stimulated with mustard, the mustard has been sprinkled over the surface of the poultice, and it has either greatly annoyed the little sufferer or has been removed by compulsion, on account of undue irritation; and your patient is worse, in all probability, than if it had never been ordered.

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I find it pays me well for my time spent and painstaking in showing how to prepare and apply at least one or two poultices early in each case, where they have not a trained nurse. And this only suggests a general principle of great importance, especially in the treatment of the ailments of children, viz.: Close attention to the various little details in the management of our little patients, by personal supervision as far as possible. The older I grow the more I am impressed with the importance of these things. Give as little medicine as possible; make it as mild and palatable as possible, and attend well to seeing that the little details of the management of our cases are carried out properly and faithfully. This will always insure for us a reasonable degree of success and deserved popularity, especially in the department of children's ailments.

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MATERIA MEDICA.

S. M. STOCKER, M. D., CHAIRMAN.

CHAIRMAN'S REPORT.

Little work has been done in this Society in the Section on Materia Medica and Therapeutics for some years past. The chairman of the section has looked over whatever volumes of the Society's reports were accessible to him in Duluth, and finds nothing presented in this department in a great majority of the volumes. In two only was the section represented at all, and the representation was limited in amount in both. The outlook was so discouraging that it was thought useless for one of little acquaintance with the profession to request papers for this department by card. Personal letters were sent to those members whose work for the Society in the past gave some token of interest in this department, but no replies were received.

What is the reason for this state of affairs? The chairman supposes it to be that many members of the profession take only such interest in materia medica as the necessities of the case compel. The few whose interest is greater, if

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such there be, probably do not care to be at the expense of time and effort to prepare a paper which will interest few or none.

This state of affairs seems perfectly natural, but is hardly right. Therapeutics is the application of the materia medica to the cure or alleviation of diseased conditions, and from one point of view at least is positively the most important branch of pure medicine. Diagnostic ability, physiological and pathological knowledge, post mortem research, neither cure nor alleviate; the sick care not for them, and, important as they are, they are still secondary to therapeutics, because their principal importance lies in the fact that their study throws the best light upon the rational application of the means to cure and alleviate.

If this be acknowledged, even the therapeutic agnostic, iconoclast, nihilist, or whatever other name he calls himself, must regret the present position of this section in the State Medical Society; and the chairman thinks he cannot do better than outline a plan by which this condition of affairs may be changed.

To speak tritely, this is an age of therapeutic activity. Our brethren, more especially our brethren abroad, are trying everything for everything, and should it seem undesirable to emulate their restless search after new things, we may at least exercise our selective ability. A strainer is a very useful article.

In this search for new therapeutic agents it must be admitted that some unquestionably useful additions have been made to the materia medica. Remember that cocaine is, therapeutically, a very recent addition, antipyrine still more recent. Rhamnus Purshiana is a good thing; the nitrites of potassium and sodium will probably prove to be such; sulfonal promises much.

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It is here suggested that whenever possible the chairman of the section be a man with at least these qualifications: First, he should have some taste for the subject; second, he should be widely acquainted in the profession; and third, he should be influential in the profession. He would presumably issue to each member of the Society the same invitation to contribute as has been issued in the past, and it is quite likely that the invitation would frequently meet with the response of the past.

In addition to this, however, the plan here proposed advocates that the chairman, immediately he is appointed, or as soon thereafter as possible, select certain drugs of interest and assign their investigation, clinical or otherwise, to some physician or physicians competent to do the work. For instance, had the acquaintance of the chairman of this year been sufficiently extensive to enable him to carry out this plan, he would have asked certain members to investigate the use of antipyrine, internal and hypodermic, for the relief of neuralgia; the hypodermic use of theine for the cure of the same disease; the use of the nitrite of sodium for the relief of asthma; the use of sulfonal as a hypnotic, etc. Such investigations need not have been limited to the clinical aspect.

The chairman submits this report to the consideration of the Society, with the conviction that only by the adoption of some such plan will the Society succeed in the aim of having work done in this department.

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PATHOLOGY.

J. CLARK STEWART, M. D., CHAIRMAN.

REPORT OF CHAIRMAN.

Primary tumors of the heart wall are undoubtedly very rare, though an exhaustive research of medical literature will show quite a number of reported cases, many of which, however, are gummata or tuberculous nodules, and hence do not strictly fall under the head of primary tumors.

Primary lipomata of the heart wall are especially rare, so much so indeed, that Schroetter, in Ziemmsen's Encyclopedia, 1876, says: "In the whole literature of the subject we find an account of only one lipoma embedded in the muscular tissue," the case of Albers, (Virchow's Archives, Bd. x.)

Zeigler and Orth mention lipomata as occurring in the heart's substance, but refer to no cases, while Cornil and Ranvier and Delafield and Prudden do not even mention the possibility of such growths.

Virchow also fails to mention them. This great rarity is my excuse for bringing before you what is seldom either edifying or instructive, a pathological specimen without an accurate and complete clinical history.

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I am able to show you this beautiful specimen through the kindness of our city physician, Dr. Chase, in whose service the patient was, and at whose request I made the autopsy. As the patient was under treatment for a trouble remote from her cardiac disease, the history contains very little of interest in this connection, but I will detail it briefly.

Katie N., aged 20, Swede, single; received on Jan. 14th, 1889, a severe burn involving the left arm from hand to shoulder, and also the right arm half way to the elbow, accompanied by slight burns of the face and the left side of the chest.

She was taken to the hospital, rallied well from the shock, and her burns progressed as usual till the 18th of January, when she had a rigor and rise of temperature, reaching 105° F. on the evening of the 21st, when the eruption of erysipelas appeared.

This complication lasted, with high temperatures, till about March 1st, at which time the hospital record shows the morning temperature to have been 97° F., with a pulse of 80, and the afternoon temperature 98° F. and pulse 116.

The temperature remained low after this date, with an occasional afternoon rise, the pulse varying from 100 to 126, until the 23d of March, when there was set up a persistent capillary hemorrhage from the whole granulating surface on the left arm, which proving unmanageable by ordinary means, was finally controlled by an amputation through the upper third of the left arm.

The patient was anæsthetized with chloroform, which she took nicely and reacted well after coming out from its effects, and was conscious for some hours. She soon began to sink, however, and died at 1 A. M. on the 24th, presumably from shock.

The autopsy was made nine hours after death. The body

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was well nourished. There was some œdema of the lower extremities. The left arm showed an amputation stump at upper third. There were small granulating areas on the left breast and the right forearm, which appeared healthy.

On opening the abdomen there was seen a moderate amount of abdominal and omental fat. There were no peritoneal lesions, and the intestines were normal. The liver was large, pale and fatty. The kidneys were large and soft, but markings were fairly distinct. The spleen was a little enlarged, and very dark and soft. Both lungs were much congested and œdematous.

The heart was rather large, weighing 11 ounces, and appeared broad in proportion to its length, and was covered on nearly its whole anterior aspect by a layer of fat.

On opening the ventricles a large mass was seen, occupying the inter-ventricular septum and encroaching on both ventricles, especially on the right.

Viewed from the right ventricle, the tumor appeared as a pyriform shaped white mass, its apex extending into the pulmonary orifice and its base reaching to within one inch of the apex of the ventricle. Lying in contact with this to the front was another part of the tumor, which had involved and thickened the wall of the right ventricle. That part of the ventricle leading to the pulmonary orifice was much narrowed, but the valve had not been interfered with.

The tumor could not be seen from the left ventricle, but its site was marked by a bulging of the inter-ventricular wall in its upper two-thirds, which greatly narrowed the aortic opening and upper part of the left ventricle.

On section there was seen a clearly outlined tumor two and one-half inches in diameter, which was covered on both ventricular aspects by a layer of muscle, and the normal endocardium being also separated from the sub-pericardial

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fat over right ventricle by a continuation of the same layer of heart muscle. The auricles were normal, as were also the valves. The coronary arteries did not appear to be involved by new growth. The endocardium was healthy, excepting a few milk spots. The heart muscle was pale and brown, and showed fatty infiltration.

A microscopical examination showed parenchymatous degeneration of the liver and kidneys, and a moderate amount of fatty degeneration of the heart wall.

The tumor was shown to be distinctly limited by the muscle layer already mentioned, though no capsule could be demonstrated. It was composed almost entirely of fat tissue having a scanty connective tissue framework.

Sections from the centre of the mass showed the features of a typical lipoma, while those from the periphery contained more or less greatly degenerated muscle fibres.

I think you will all agree with me, on examining this specimen, that it is a true fatty tumor, and not a mere ingrowing of the sub-pericardial fat, as it is entirely separated from the latter by the layer of muscle fibres.

Whether this tumor was of long duration and slow growth, or whether its genesis dates from the extensive fatty degeneration of the heart muscle and the great viscera, cannot be positively decided, but the theory advanced by Handford (Path. Soc. Trans., London, 1887,) to explain the formation of a similar though smaller tumor occurring in the inter-auricular septum, is certainly of interest.

He says: "The tumor probably originated in the intermuscular connective tissue, and its growth was facilitated by the fatty disintegration of the muscular fibres which provided pabulum which was stored up locally instead of being taken into the general circulation and then deposited.

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"It was not merely a fatty disintegration of the auricular wall; there was an increase of thickness, and a distinct tumor indicating new growth and a storing up of fat.

"In true fatty disintegration the fatty particles when set free are taken up chiefly by migratory leucocytes, and partly by the small blood vessels and lymphatics.

"Reaction inflammation begins, and ultimately fibrous tissue develops from the granulation tissue built up by the leucocytes and perhaps by the multiplication of the fixed tissue cells. In this way the connective tissue basis of a lipoma might be produced and the fatty infiltration of it would be facilitated by the abundance of fatty particles in the immediate neighborhood."

This may be a plausible explanation of a tumor three-fourths of an inch in diameter in a broken down subject of '76, but it is difficult to see how it can be applied to account for the much larger tumor before us, where there was good health in a young girl, till a traumatism followed by nine weeks of suppuration caused the extensive degenerations found at the necropsy.

What we know of the life history of lipomata in other locations does not lead us to associate their genesis with extensive degenerations of the viscera, and I think the probabilities are that this large tumor existed before the burn occurred and was not directly connected with the visceral lesions.

In reviewing the scanty history of this case, we are surprised that there should have been no noticeable symptoms pointing to the heart, especially on the occasion of the chloroform anæsthesia. Theory would lead us to expect bad effects from chloroform on a heart with fatty degeneration and infiltration and furthermore embarrassed by this large

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tumor; but there was no trouble whatever, as she took the anæsthetic and came out from under its effects in a perfectly normal manner.

On studying the recorded cases of primary heart tumor, the symptoms are seen to be very varied and not at all significant of the special lesion.

The majority of these cases resemble the one just detailed in having practically no symptoms, except a sudden death, while even in the few cases which were under careful observation for some months previous to the end, the symptoms merely pointed to embarrassed heart's action.

The symptoms most commonly noted were first dyspnœa, in some cases on exertion only, in others when lying down, and often severe and distressing. Lividity of the face and dizziness on stooping were noted in three cases. Œdema of the face and later of the extremeties, with engorgement or varicosity of the superficial veins was commonly observed.

The pulse rate varied very widely. Two cases had a rate of 25 to 30 with great irregularity, while others had a pulse of 96 to 120, small and regular, it being noted that there was involvement of the coronary arteries in the cases with exceedingly slow pulse.

In a number of cases there was a change in the heart's sounds due to the mechanical interference with the different valves by the tumor, and it would seem as if the case before us should have given the rare murmur of pulmonary obstruction as there was decided narrowing.

Anginal symptoms, such as sudden attacks of severe pain, "sinking spells" and cardiac asthma are mentioned in only two cases. Dysphagia and palpitation are noted in several cases. Bodenheimer's carefully reported case gave a history of hæmoptysis for four years, with weakness and general

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poor health, associated with bronchitis, emaciation, diarrhœa and albuminuria.

The heart's sounds were dull and there were evidences of pericarditis. Diagnosis was emphysema and chronic bronchitis with probably cardiac disease.

The autopsy after a very sudden death showed a large sarcoma involving the pericardium, the right auricle and the upper part of the inter-ventricular septum.

The summary of the symptoms noted in a number of cases would read: there were distinct evidences of slight cardiac hypertrophy, but nothing else pointing to disease of the heart, the patient died suddenly during sleep, while defecating, or fell and was taken up dead; at the necropsy a tumor of the heart was found.

The explanation of this great diversity of symptoms is that the non-malignant tumors give rise to symptoms only as they interfere with the proper performance of the heart's functions or its nutrition.

As soon as they form, their position or size interfere with the perfect action of the various valves. We have a condition identical in its history with the valvular disease caused by endocarditis, and the symptoms of cardiac embarrassment and failure follow in the regular train.

I have brought here to-day another almost equally interesting tumor of the heart wall, already reported in the Northwestern Lancet, Dec. 1, 1888.

In this specimen a mediastinal sarcoma has involved the pericardium and heart wall by contiguity, entirely enveloping the heart except near its apex and behind.

In this heart the left ventricle is practically normal, while the wall of the right is almost completely transformed by the tumor, infiltration being over an inch thick, white and

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rigid; and having lost all semblance to heart wall, excepting a narrow strip at the left which is nearly normal, and must have done all the work for the right heart.

The cardiac symptoms in this case were well marked, being caused mainly by pressure, by the complete adherence of the pericardium and by involvment of one coronary artery.

The symptoms were first dyspnœa on exertion, rapidly increasing, with cough and œdema of the extremities. Palpitation of the heart, anginal attacks, dysphagia, a rapid, feeble pulse, irregular toward the last, were terminated by death from exhaustion.

I have prepared for your inspection, slides showing sections of both tumors; that from the lipoma being taken from periphery so as to show the scattered muscle fibres. Both specimens show a partially similar condition under the microscope, there being in both an interstitial myositis. The intermuscular connective tissue in one case is infiltrated with fat, and in the other with the small, round cells of the sarcoma.

The following specimens have been handed me for examination and presentation to this Society:

Dr. J. H. Dunn presents tubes and ovaries. The tubes are greatly enlarged and tortuous, measuring three-fourths inch in diameter at largest part. The ovaries are enlarged and indurated. On one side there is a small cyst between the layers of the broad ligament whose origin is doubtful.

As it was desirable not to destroy this specimen, sections were made of the tube at but one point.

These sections show marked hypertrophy of the fibrous and muscular elements of the tube, great increase and

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dilatation of the lymph canals within the tube, and a marked infiltration of all these tissues with round cells, and a further filling up of all open spaces with these same round cells.

There appears to have been a chronic inflammation of the tubes, leading to hypertrophy of all the tissues with a purulent infiltration of same.

Dr. J. H. Dunn presents a large cystic tumor of the sacrum. This is a very large tumor, containing a number of large and small cysts containing bloody fluid. The solid parts of the tumor are pinkish and of moderately firm consistency.

Sections show that it is made up almost entirely of smooth muscle cells, with a fibrous tissue framework, and is quite richly supplied with vessels. The diagnosis is therefore a cystic fibro-leio-myoma.

Dr. Dunn also presents a small tumor of the scalp. It is a subcutaneous lobulated tumor of very firm consistency, containing a good deal of pigment in some parts.

On section we find a very peculiar arrangement of cells, packed into irregular shaped spaces and pigmented in some fields, which is suggestive of carcinoma, but in various parts of the sections spindle cells can be seen packed into bundles, and the deceptive alveolation is due to the irregular arrangement of these bundles, which allows many to appear in cross section. This is therefore a melanotic sarcoma—of the general arrangement found when moles have become sarcomatous.

I also show you slides bearing sections of the heart tumors mentioned in my paper, and one from the main sarcoma of the mediastinum, and I also show you a third heart which, if less rare, may prove equally interesting,

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as it shows the results of a chronic endocarditis affecting mainly the mitral valve and causing the most complete stenosis which I have ever happened to observe.

The consequent dilation of the auricles, especially the left, is very marked.

Another tumor from Dr. Dunn was received too late for thorough examination. It is a mass involving two-thirds of one kidney, there being no other tumor observed at the necropsy.

This appears to be an infiltration of the kidney, as many details of kidney structure still show in the tumor, and there is no crowding aside of the kidney tissue.

Sections show the same fact, as they all show tubules or other parts of the glandular structure of the kidney, surrounded by masses of round cells, or by a tissue rich in irregular shaped cells, with branching processes that is myxoid tissue.

If this is a true tumor of the kidney, it must be put down as a myxo-sarcoma, but I should hesitate to so pronounce till further study had excluded tuberculosis.

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THE MICROSCOPE IN MEDICINE.

F. W. EPLEY, M. D.

Prof. J. Adams Allen used to say to his graduating class each year: "When called upon to take charge of any case of disease, the first thing to do is to find out what's the matter; then make up your mind what you are going to do about it."

The wisdom of this injunction cannot fail to impress itself more and more upon the professional mind as the years go by.

We cannot be too thorough and exhaustive in our attempts to correctly diagnose each case coming under our observation, no matter how simple. A simple case may be mistaken for a grave one and no one be actually harmed thereby—indeed, the physician may gain much credit for superior skill in so quickly relieving so grave a case, i. e., in the minds of the laity, but he has lost a certain amount of confidence in himself with each such blunder.

On the other hand should he commit the opposite error, and give a benign diagnosis to a malignant disease, who shall compute the magnitude of the error and measure the suffering such an one might entail?

A careless diagnosis hurriedly made is, or should be, in many cases a criminal act. On the other hand, a carefully made, painstaking diagnosis, arrived at after exhausting all the improved methods of physical examination, even though in error, may be excused.

The aids to diagnosis which should be most sought for and relied upon, are those of course which give us positive

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information. Among these may be mentioned, the thermometer, the urinometer, the stethoscope, the ophthalmoscope, the laryngoscope, &c., &c., and last but not least the microscope.

It is upon the use of the microscope in diagnosis I wish to speak for a few moments at this time, and I feel that I should owe an apology to many of the members of this section for taking up their valuable time with what I may be able to offer, if it were not for the importance of the subject, and the fact that practical information upon methods, &c., is not general among the profession as a whole, and I hope to be able to offer a few suggestions which may be available to at least a few of the members of this society and place within their reach this powerful and positive aid to the correct and intelligent diagnosis of certain otherwise questionable conditions.

It is not to be expected that all of us should be experts in all the branches of our science—that all should be specialists in surgery, gynæcology, ophthalmology, &c., but that some may go deeply into each, and bring to the surface means by which all may be benefited. We may not all be adapted to the practice of surgery and so some of us need aid from others who are.

So it is in the manipulation of the microscope—not all are calculated to make a success of microscopy. Indeed it is surprising to know how few of the profession of the country, even including those who have expensive instruments, understand and practice mounting specimens. I say it is surprising, I mean it seems surprising; but when one understands by experiment the close application, the nice manipulation, the hours and days of disappointed experimental labor necessary for the accomplishment of microscopic results, the wonder grows less that the busy professional man does

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not take the time it requires to keep his hand in, even though he may have become proficient in the art during his college days:

However, the fact that he cannot take the time to make the examinations himself does not lessen his responsibility to his patient. He may be perfectly competent to make them himself, and may have the inclination, but perhaps he has not had a case requiring microscopic aid to diagnosis in several weeks.

A case comes up in which he suspects tuberculosis; the physical symptoms all point that way, but not with sufficient definiteness to warrant a positive diagnosis of phthisis. He attempts to examine the sputum for bacilla, but finds his stains are worthless, or some one of his steps in the mounting process is unreliable, and when he examines the mounted specimen and finds no bacilli, he is by no means certain that they are not there, simply because he does not have sufficient in this line to do to keep his chemicals in certain working trim; he soon loses confidence in them, and the inevitable result is he takes his chances on making a correct diagnosis on physical exploration, and the microscope gradually falls into unmerited disuse.

This last is assuming that the physician has a proper instrument and understands microscopic technique. I believe however, that not one physician in ten owns a proper microscope, and not one in ten who owns one does original work at mounting. If I am wrong I am glad of it, and I hope the time will soon come when the great value of the microscope as an aid to diagnosis will be appreciated and made use of universally.

The practical problem then arises: How can this be accomplished? And the practical solution of the problem I believe is as follows:

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Let some qualified member of the profession who seems specially adapted to microscopic work be given the work in this line of all those not prepared to do it for themselves satisfactorily, in a certain locality. In this way he will have enough of it to do to make it interesting to him, and he will be able to give definite positive results from his examinations because he will have everything in positive working trim. This can be and is done now in certain localities.

One of the most important uses of the microscope is in the diagnosis of tuberculosis of the lungs, and I maintain that there is no approximating a certainty of diagnosis without its aid. Cases may present all the usual physical symptoms of the disease and yet be free from bacilli, and if so, they can be cured; on the other hand they may not present any or scarcely any of the physical symptoms, and yet be swarming with bacilla, and if so they will as certainly die.

If on satisfactory examination of the sputum no bacilli are found, redoubled effort with restoratives and constructives and the warrantable assurance we are able to give the patient will often be crowned by success, even though life has been despaired of.

Or if bacilli are present in the acute or malignant form (if I may be allowed the expression) and the patient given positive and early assurance that a change of climate is imperatively demanded, we may prolong indefinitely sometimes valuable lives.

Suspected sputum may be sent by mail very conveniently by observing the following directions:

Supply the patient at night with a perfectly clean morphine bottle with a good cork. Instruct him to half fill it with the first he coughs up the next morning and cork

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tightly. Take a pine block three inches square and six inches long, bore a hole in one end of it five inches deep with a one and five-eighths inch bit, put the bottle in the hole, cork it in the block and it is ready for its paper wrapper and directions.

On the same principle much smaller amounts may be sent in one or two drachm vials in much smaller blocks.

Specimens of urine may be sent in the same way by carefully corking them inside a solid block. This I am told is not any infringement on the postal laws.

When urine is sent the quantity should not be less than one and one-half ounces, and that taken from the whole quantity passed during the twenty-four hours preceding, after carefully stirring and measuring it. A statement of this amount should also accompany the specimen.

When specimens of tissues are to be sent: If large they may be first wrapped in a cloth wet with glycerine, and afterwards with other wrappings as may be required. This precaution is necessary to prevent the tissues from becoming hardened. Many a fine specimen is spoiled by getting dry. A cell once dried can never be brought out to its original condition again, and therefore loses its identity. If the specimen is small it should be placed in a small vial of common alcohol, and sent in a block, in the same manner described for sending sputum.

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MEDICAL EDUCATION.

E. Y. CHILTON, M. D., CHAIRMAN.

CHAIRMAN'S REPORT.

GENTLEMEN:—I will not take up your valuable time with a long report, but will call your attention briefly to some advances made in this State within the last year, looking to an elevation of the standard of medical education.

The medical atmosphere is becoming clearer every year. The contagion, if I may so express it, is affecting alike the people and the profession. All that is good, all that is pure, and all that is noble, demands it. Several gentlemen will present to you papers of very great interest, bearing on the subject and discussing it from various standpoints. All of them make a strong plea in favor of a higher standard for medical education.

While steps have been taken to overthrow our medical practice act, yet through the energy and untiring zeal of the State Board of Medical Examiners, the law still remains in force, and has done much and will continue to do more toward ridding the State of unqualified practitioners. While the action of the board has not been approved for being too

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lenient in some few cases, and while they may have to some extent overstepped their authority, yet there seems to have been such outside pressure brought to bear upon the board, that they deemed it better, at least for the time being. "The wisest as well as the best of men have erred."

It is not intended by the law that the board should prosecute; their duty is simply to see that physicians coming into the State to practice medicine and surgery are qualified under the law. The law makes it the duty of the county attorneys to prosecute such cases when their attention is called to it, and every true physician in the State who has the welfare of the people and profession at heart, and desires to see the standard of medical education raised, will see to it that no unqualified self-styled physician goes unpunished.

The willingness of physicians to comply with the law is evidence of itself that they have at least made an effort to qualifiy themselves and do not wish to impose upon the people and profession of the State. While those who try to evade the law show that there is something wrong somewhere, especially when the examinations of our board are so fair, reasonable and practical.

Our doctors are just what the colleges have made them, and so will the doctors of the coming decades be in a good degree reflections of their alma mater. Let us be prudent and hold on to what we have, although it is not as good as we ought to have. Believing that the State Medical Examining Board desires to do, and will do what is right, let us not only as a society, but individually, give them our earnest and united support. The people will have to be educated in these matters. Let us make it a point to endeavor to show the people with whom we daily come in contact the importance of these things, and when understood the laity will be only too glad to give us their support in these matters.

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Prof. Osler, in his address before the medico-chirurgical faculty of Maryland on "License to Practice" says "that the practical working of the examining boards as shown in Minnesota, North Carolina and Virginia, presents no difficulty, and it constitutes an effective barrier against the inroads of poorly qualified graduates. In a few years this measure will be widely adopted. It has certain advantages in a simple mechanism, and in clearly defined duties. But the powers are too limited, and there is no control of education, preliminary and special, such as comes strictly within the power of the profession in each State."

The greatest advance probably that has yet taken place in Minnesota for the elevation of the standard of medical education is the merging together of two of the principal medical colleges into the medical department of the State University. If we only had one medical college in each State in the Union and that connected with the State University, we would then have more medical colleges in proportion to population than any other foreign country.

According to Dr. Wm. G. Eggleston of Chicago, in the Journal of the A. M. A., the ratio of medical schools to population is as follows, viz.: Austria 1: 6,032,421. Belgium 1: 1,348,163. Denmark 1: 1,969,039. France 1: 4,513,223 Germany 1: 2,350,000. Italy 1: 1,353,671. Japan 1: 1,716,920. Norway 1: 1,806,500. Mexico 1: 1,100,890. Netherlands 1: 1,015,142. Portugal 1: 1,449,517. Russia (in Europe) 1: 8,750,000. Spain 1: 1,662,586. Sweden 1: 1,526,300. Switzerland 1: 948,700. United Kingdom 1: 844,444. United States 1: 518,846. Average for the sixteen foreign countries, 1: 2,401,469 people. We have then in the United States as many colleges as are sufficient to educate medical men for 300,000,000 people, assuming that the average ratio for foreign countries represents a sufficiency.

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The medical department of the State University has recently taken a grand and good step toward elevating the preliminary standard of medical education, having passed a by-law making Latin compulsory after 1889.

This is another step in the right direction testing as it does the qualification of a candidate to study medicine, and will no doubt be hailed with delight by the profession of the State. It is impossible to overrate the importance of a preliminary education before taking up the study of medicine. The standard is already too low. A student before taking up the study of medicine should have a thorough collegiate education, such as is given by our State Universities. A limited knowledge of a few of the English branches is not enough. A physician ought to be able to cope with disease and keep abreast of the times, and to this end he should have a thorough general education, without which he cannot hope to have a thorough medical education.

Therefore the whole matter should be regulated by the State, and what would be still better, by the national government. Then we would have a universal standard. Then let students take a thorough university course before entering the medical department. Then in justice to themselves and the public whom they intend to serve, they should be required to take at least a four year's course of didactic lectures, including laboratory work, followed by at least two years practical hospital instruction. Anything short of this and the student would have only been going through a cramming process, getting only a smattering knowledge of what he has gone over, which in no way fits him for the practice of medicine.

When this is accomplished we will hear less talk of an overcrowded condition of the medical profession. That it is overcrowded with incompetent physicians there is no doubt.

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But there is room, yea! plenty of room! for competent and thoroughly qualified practitioners.

Then in the language of Dr. Millard, ex-president of this Society, "Let us purify our ranks of illiteracy, elevate the present standard of qualification to enter the profession, and unite heart and hand in the pursuit of the noblest of all professions or avocations."

IMPORTANCE OF THE MEDICAL SCHOOL BEING CONNECTED WITH THE UNIVERSITY.

TALBOT JONES, M. D.

I have decided convictions on the subject of medical education which I do not hesitate to express on proper occasions. While it will be impossible for me to go into the subject extensively, perhaps a word or two will be sufficient to indicate my views regarding at least one aspect of the subject, and from a local standpoint.

I believe that the greatest advance that has yet taken place in Minnesota has been the discontinuance of the several independent medical colleges, which were always weak, deficient in apparatus and facilities for teaching, financially crippled, and at best but poorly supported, and which received either the half-hearted and perfunctory support, or positive opposition of the medical profession of the Northwest, and the merging together of the faculties of these schools into the medical department of the State University.

This union of medical school and university cannot fail to promote that spirit of research and investigation which

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naturally follows the existence of the scientific spirit. Among the benefits which will naturally flow from the discontinuance of these independent schools, by which they become integral and co-ordinated parts of the State University will be a better equipment of laboratories, improved methods of instruction, a greater zeal for research, the seeking of truth for its own sake, improved methods of instruction and a more orderly and systematic scheme of study.

Great practical advantages in making a medical school a department of a university are economy of organization, and the promotion of higher medical education. "The assumption by independent schools of medicine of the power of granting the doctor's degree, without any control from a university or from the State, is a main reason in this country for the lack of uniformity in medical education, for the enormous number of medical schools beyond all necessities of the community, for the ease with which medical degrees can be obtained, and the consequent degradation in the significance and the value of the degree of doctor of medicine."

It is only necessary to point to the experience of Germany, which is generally conceded to be far in advance of all other countries in the teaching of medicine, to show that the highest development of medical education is attained today, as it has been in the past, by the university system; and in Germany medicine is taught only as a department in a university. Separate and independent schools do not exist there. One important and specific advantage belonging to the university system is a medical school permeated by the "university spirit," and its otherwise intimate association, and not mere affiliation with the university, which will insure an amount and degree of preliminary education, without which no one should be permitted to enter upon the study of medicine.

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I agree with Dr. Welsh that there must be a union of spirit as well as in name. The influence of university methods and ideas must manifest themselves in the medical department, sympathetic relations must exist with other departments through the connecting link of all, the philosophical faculty, and the co-operation must be obtained of those physical and natural sciences, physics, chemistry, zoology, comparative anatomy and botany, knowledge of which is essential to a complete medical education, and to scientific research in every branch of medicine.

One of the greatest defects in our present system of medical education, and one which is most constantly criticized abroad, is the almost total absence of laboratory work and that scientific spirit which induces workers in physiology, histology, pathology and other branches, to investigate for the pure love of investigation, and without regard to its immediate practical value.

Such original investigation and research is the work par excellence which sheds lustre on medical education, which brings fame to the individual and renown to the college, and which, more important still, adds to the sum of medical knowledge.

If these defects in our present methods of teaching are ever to be overcome, the initial steps are far more likely to take place in the medical department of a university properly endowed, than in any of the weak and struggling independent medical colleges, which are far removed from a university atmosphere.

Students intending to become physicians, who are yet pursuing their academic studies as freshmen, etc., should make their intention known to the faculty of the university, and the latter could then lay special stress upon those studies which have a direct bearing upon the future study of

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medicine, physics, chemistry, comparative anatomy and other branches already mentioned.

When the proper time arrived for students to matriculate in the medical department they will have already been well grounded in the branches just named, which, if not absolutely essential, are of great practical value to physicians and those pursuing the study of medicine.

If some such plan were carried out by teacher and pupil it would go far towards solving the problem of preliminary education of which we hear so much. It would solve it so far at least as university students are concerned, though of course other plans would have to be adopted relative to those students who have never attended a university, and those who have had no preliminary education.

These views may or may not be right, but they are at least the honest convictions of one who is entirely independent and in no way connected with any medical school or faculty, and who only desires to see a general elevation of the standard of medical education, and is willing to co-operate in any plan to secure that end.

DISCUSSION.

DR. PHILLIPS thought the paper struck an unjust blow at private medical institutions.

After further discussion, DR. BEARD offered the following resolution, which was adopted:

Resolved, that the State Medical Society, in its section upon medical education assembled, endorses the efforts of the medical faculty of the university to elevate the standard of its preliminary requirements, and respectfully urges the regents of the university to ratify that effort.

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MEDICAL EDUCATION AND MEDICAL LEGISLATION.

E. A. FISHER, M. D.

It is not the purpose of this paper to dilate opon the necessity of a higher standard of medical education, nor yet to bemoan the evil resulting from the present loose condition of medical affairs in this State. Both these are sufficiently manifest to every member of this Association, and need no argument to establish their claim upon our attention. It is therefore chiefly to the legislative branch of the subject that your attention is now invited.

As a fitting illustration of the utter inadequaey of our present medical laws, I will allude briefly to affairs in my own county, where by request of the present examining board I have acted as reporter, and exercised such supervision as was possible under existing circumstances.

Of eight persons claiming the title of doctor, only three are graduates, and but two of these (Dr. G. R. Christie and myself) are now in actual practice.

Of the remaining five, one only is registered with the clerk of the District Court, though two others are known to have been licensed under the old board upon their affidavits furnished early in the spring or summer of 1883. That both their affidavits were frauds is a fact beyond question, though the old board acted in good faith in granting their licenses. One of this pair is a strolling vagabond, who can neither read nor write, and yet in his backwoods rambling practice he gathers more shekels than the average country practitioner who has earned his diploma, and is now earnestly, honestly striving to keep pace with the ever advancing science which constitutes the basis of our profession.

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Of the other two it need only be said that they are *quacks*, with no special *personalia* to distinguish them from the balance of the herd.

I may mention here that I have been to no little pains to look carefully into each individual case, and by the aid of our county attorney, fully determine the chances of sustaining an action in the courts against any or all of these charlatans. But unfortunately we were confronted by the cold, hard fact, that while the grandest of living practitioners dare not assume to do practice in Minnesota without first submitting to an examination before our State Board of Medical Examiners, the most shameless quackery finds its highest protection in the very law that was enacted for its suppression.

I wish here to pay the highest possible tribute to both the old and present boards. They have done their utmost to bring this vampire element to justice, but their vested authority is too meagre; their chief influence can only reach those who need it least.

But we need waste no time in useless regrets. The evil being apparent, we owe it to ourselves and the public that we lose no time in inaugurating a reform so thorough that this crying evil shall be stamped out beyond the possibility of future resurrection.

In a paper read to the Mississippi Valley Medical Association last September, under the title of "Uniform Medical Legislation," I suggested a line of action which was adopted, and a committee appointed who will report at the coming meeting at Evansville, Indiana.

I copy the suggestions here, believing they embody the essential points to which this society should direct its present attention:

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First.—The appointment by the Governor, of a State Board of Medical Examiners, if such does not already exist.

Second.—Requiring all persons doing any practice, except in their own households, to be duly registered with the clerk of the District Court in terms similar to the Minnesota law of 1883, previously referred to.

Third.—The appointing by the State Board of Medical Examiners of some reputable physician in each county as medical supervisor and reporter.

Fourth.—All "midwives" to be duly registered with the clerk of the District Court, and to be under the immediate supervision of some regularly graduated and practicing physician, to whom they shall report all cases of confinement or premature labor at which they may be present, together with all essential data pertaining thereto.

Fifth.—All non-graduates to pass a satisfactory examination before the State Board of Medical Examiners within one year from July 1st immediately following the passage of the act, or be debarred from practice until properly qualified.

Sixth.—Violations of the foregoing requirements to be punishable by fine or imprisonment, or both.

It is believed that the points here noted would, if added to the requirements now existing, form a legal weapon which with vigorous wielding, would suffice to slay this peace destroying monster of the medical world, and enable us to regain the citadel of honor and distinction which—view it as we may—we do not hold in undisturbed possession so long as our ranks are tainted with this horde of illiterate, undisciplined pretenders.

In conclusion I beg to suggest that the President of this Society now appoint a committee who shall carefully prepare a bill to be submitted to the next meeting, with a view to securing the services of our several legislators at the next

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session in enacting a law so sweeping, and yet so just, that in the near future it can be shown that in one State at least, medical affairs are not entrusted to the ignorant as freely as to the learned.

DUTY OF PHYSICIANS TOWARD A CERTAIN FORM OF QUACKERY.

A. T. CONLEY, M. D.

GENTLEMEN: The particular form of quackery to which I am about to call your attention we usually pass by as belonging rather to the field of the philanthropist. But the evil is so widespread that I venture the assertion without fear of contradiction that every member of this Association meets it at every turn; for it is advertised in almost every newspaper, and pamphlets and little books are sown broadcast everywhere, by quacks and self-styled medical concerns, setting forth the awful results of seminal weakness, spermatorrhea, nocturnal emissions, manhood and womanhood lost, etc., *ad infinitum*. This kind of literature you have all seen, but I doubt if any of you have had the stomach to read the nauseating nonsense—at least since you were boys.

But this trash is read by country boys more extensively than ten cent novels, and with a hundred fold worse results. I say country boys advisedly, for they lead a more quiet, meditative life than our town and city boys, and so read and meditate over this wretched stuff, written in a highly sanctimonious Pecksniffian style, which they, like poor Tom Pinch, are too innocent and inexperienced to see through, and many a young man is driven to melancholia and insanity

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through his excited imagination, believing himself ruined for time and eternity. Why, his manhood is lost, his friends are forsaking him, he can never marry, God frowns upon him, the pit yawns before him, and he believes the madhouse will be his future home unless he ends his miserable existence at once by suicide.

This picture is not overdrawn. Why, within the last three weeks I have been consulted by three young men, all apparently in good bodily health, whose minds had all been poisoned by this kind of literature. One showed decided tendency toward settled melancholia. He told me he had sent to one of these quacks "for lots of medicine," but it did him no good; he still continued to have seminal emissions as often as once every one, two or three weeks.

Think of it! A young man six feet tall, weighing two hundred pounds, having a seminal emission as often as once in two weeks on an average, and spending all the money he could earn working on a farm at $20 per month trying to stop it.

During the last winter I treated a lady who had genuine religious melancholia, and who could have been sent very properly to an insane asylum under that head. When I tried to find the cause I was baffled. She was happily married, had a fine family of four children, and all sanitary surroundings were good. She concluded I did not know what ailed her, and tried two prominent physicians of Red Wing with no better result. Then she came to Minneapolis and consulted a noted doctor; still no relief. By accident I stumbled on to the right track. I found she had been reading Dr. Low's, or Dr. Lucas', or some other doctor's "Guide to Health," and there she read and learned for the first time of the awful dreadfulness of masturbation. The facts were that for a year or two before her marriage she

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had occasionally been guilty of the act, and though she had been happily married for more than twelve years, during which time she had never masturbated once, and had always had the best of health, yet this "Guide to Health" had at last opened her eyes, and she saw what a sinful, depraved human being she was or had been, and so concluded she had committed the unpardonable sin, and was only fit for the madhouse or a suicide's grave.

Such cases could be given by the dozen, at least in the male subject.

I have been in practice now fifteen years, and presume have had the usual number of such cases that fall to the lot of the country practitioner, yet I can truthfully say I have never yet met a case that needed any other treatment than a good assuring talk with good advice, some hygienic rules and a little bromide of potassium.

And yet these human vampires, for mercenary purposes alone, are permitted to prey upon the community at large in every State, county, village and neighborhood in all this vast country, and we look on disgusted and feel that all we can do is to set the poor dupes right when they come to us. This is too often like locking the door after the horse is stolen.

But can we do anything else? Most assuredly we can try. This literature is sent to old and young, male and female, alike. One of these books was handed me very recently which was sent to a young lady of our village, and our postmaster tells me it is common for these books to come to his office for young ladies. From this incident it was suggested to my mind that it was possible to prohibit the stuff from going through the mails. But congress is the only body competent to act in the matter. Then why not bring it to the notice of congress, say in a memorial from

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our State Association? And we could also press the matter personally with individual members.

But, says the objector, how could congress reach the matter? Well, there are a number of ways. I will suggest one. All our States now have State Boards of Health, I believe. Congress can forbid all this kind of literature being sent through the mails unless it has the stamp of approval of the Board of Health of the State from which it emanates.

Some may smile at the idea of boards of health taking hold of this matter, but surely it is right in their line. Let all persons who propose to treat private diseases, and write treatises on the same for general free distribution, be required to submit them to the State Board of Health, and if the board approves, then they can use the United States mail, otherwise not under heavy penalty. All advertisements of like character in newspapers to come under the same rule.

We prohibit quacks by law from settling for practice in our State, and yet many of them are doing a thriving business by mail. Let us keep after them and cut off that line also.

As these fellows all claim to be doctors, it seems to me it is our duty to not only expose them, but to use all honorable means to suppress their nefarious business.

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NECROLOGY.

DANIEL W. HAND, M. D.

(Born August 18th, 1834. Died June 1st, 1889. Aged 55 years.)

After a good preliminary education in the public schools of his native State, he studied medicine in the office of Dr. John Wiley, at Cape May Court House, and graduated at the University of Pennsylvania in 1856. One year later he located in St. Paul and began the struggle for the high position which he finally obtained.

In 1861 he, in common with many others, had a peremptory call to another and untried duty. The fortunes of war had deprived the First Minnesota of its surgeons; Dr. Hand volunteered promptly as the assistant, and speedily won the confidence and esteem of his associates there. He was promoted Surgeon U. S. Vols. the same year.

After notable service with the Army of the Potomac in the Peninsular campaign, he filled several appointments as Medical Director in the Department of Virginia in 1863, and in that of North Carolina in 1864-65.

It was while Medical Director of New Berne, N. C., that his ability for organization and administration was put to a crucial test. Yellow fever appeared there early in September, 1864. As soon as it was recognized Surgeon Hand

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urged and assisted the depopulation of the place, and at the same time instituted a thorough sanitary overhauling of what proved to be a hot-bed of pestilence. Among the white population there were, in less than two months, 705 cases of the disease, and 288 deaths. Out of the medical staff numbering sixteen, eight died of yellow fever. Just before the close of the epidemic Surgeon Hand had a slight attack but easily recovered.

The heroic work done by those physicians has not been published; part of the record lies buried in government archives in Washington, part has never been written. The story of Dr. Hand's share in it ought to be recorded in the report of Minnesota's contribution to the war now being compiled under the direction of the State. He exhibited a masterly efficiency in great emergency, and a manly courage in the presence of danger and difficulty which won for him as for his fellows there, the highest praise. He received official reward by being brevetted Lt. Col. U. S. Vols.

He was wounded at Fair Oaks in 1862, and in 1863 was captured, in a skirmish, and sent to Libby Prison. After his release he was on active duty till a few months after the close of the war, and was honorably discharged in December, 1865.

He returned to St. Paul and again began the work he left in 1861.

I need not recall the details of Dr. Hand's professional life, they are the common knowledge of all of us, still there are a few characteristics which ought not to be omitted here.

He was a general practitioner in the highest and best sense of the term. None knew better than he the advantage to profession and patients, of legitimate specialization, but he never lost sight of nor surrendered his right to the widest knowledge of his art or to any department of its practice;

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his consultation practice included the entire field. It was a peculiar one, and steadily increased almost to the end of his life, and included clients beyond the limits of the State. It was a heavy draft on his waning strength for months before his death, and was a cause of anxiety to his faithful wife and intimate friends. There can be little doubt that he kept it up from the kindest of motives, for he knew very well the confidence and esteem in which his brethren and clients held him.

His service was not only a professional advantage, it was often a great personal satisfaction as well, so that an appeal to him for counsel was frequently based on reasons very hard for him to gainsay or resist. It must have soothed many an hour of suffering he had to endure before the end came, to have been constantly aware of this kindly personal element in his daily professional work.

Dr. Hand's mental peculiarity was his well sustained equipoise. His knowledge was fairly distributed over the whole field he had to cultivate, and the other fields tributary thereto; he learned quickly; his knowledge was well digested and always available; he reached conclusions promptly if needed, but preferred deliberation if possible; he was open to conviction, but had the courage to declare his opinions against any opposition if need be. He was a good listener, and always appeared an interested one, a very happy faculty in a physician. He rarely explained a professional opinion, but was never at loss to do so if necessary.

He did no systematic literary work, but gave ample evidence that he could have done so, by the occasional contributions which he made to the transactions of this and other societies, and to the journals. We all feel that such men carry with them to the grave knowledge and experience which we would be the wiser for having, but he would say,

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if asked for it, "Most of it will come by experience and study, and little of value could be learned in any other way."

Dr. Hand was a power in St. Paul and the State outside his profession. He was a business man, interested in the material prosperity of his city and State. This knowledge was always at the service of his profession or any other cause he chose to aid, and was on more than one occasion helpful in securing needed legislation, or other action favorable to their interests.

The workers represented by the State and local boards of health owe a deep debt of gratitude to him. He was one of the original members of the State board, and from 1873 till his death, its presiding officer. Though he originated no legislation and had little to do with the details of its work, he knew them all and was a watchful guardian of its interests, and his counsel was always sought in every difficulty. He took great pleasure in its work, and was happy in its success to which he contributed freely his time and his talents.

The following minute is the expression of his associates on that board of their appreciation of him, and with little change may stand as the opinion of his associates in the State Medical Society, of which, from its organization, he was a zealous and active member:

Minute adopted by the State Board of Health of Minnesota, at a special meeting held after the funeral of Dr. D. W. Hand, late President of the Board, in St. Paul, Tuesday, June 4, 1889.

The State Board of Health of Minnesota, with profound and sincere sorrow, makes this record of the loss by death of D. W. Hand, M. D., its member since organization in 1872, and its President since 1873. Though engaged in a

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large and increasing private and consultation practice, Dr. Hand promptly and zealously accepted membership in the Board, and in his address at its first meeting took the position which he maintained steadily to his death. "It remains," said he, "for us, the representatives of the third State to adopt this wise plan of guarding the public health, to prove our fitness for the task imposed. To it we must bring, not only the willingness to labor long and faithfully in acquiring information, but also to disseminate in every possible way the latest and best views of hygiene and prophylactic medicine."

His wide and influential acquaintance with his professional brethren and representative men in all stations of life, enabled him to bring to our aid from the beginning, a powerful support, which has steadily increased, and was largely instrumental in winning that popular confidence which the Board now has, and which was a source of pleasure and comfort to him when failing health warned him that his work was nearly done.

In the daily duty of the Board, which now touches so many personal and public interests, and involves often varied and delicate questions of duty and policy, Dr. Hand's knowledge of men and methods, his ready tact, courtesy and integrity, never failed us. Even during the last five years, though suffering constantly and with increasing physical weakness and discouragement, Dr. Hand did not falter in his devotion to this part of his life work, but was as active, vigilant and efficient up to within a few weeks of his death, as ever before.

His cheerful confidence and courage, his gentle persistence in meeting and surmounting obstacles, his zeal for knowledge, and his happy faculty for assimilating and using it; above all, his manly fortitude at the end, made his life in

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many ways an example of living, doing, enduring and winning, rarely found in the profession which he dignified, honored and loved.

We cannot express in this formal way the feeling of personal loss which oppresses us. Its weight is heavy and increasing. A memory of more than sixteen years of intimate personal association in which, on his side, nothing has occurred to regret, in which our regard has increased to affection, our confidence to absolute trust, cannot be told in words. That he knew it, it is consolation to believe.

We offer to his widow and his children this just tribute, inadequate but heartfelt, to one who, in every relation of his busy life, was a noble and a gentle man.

OTIS AYER.

In the death of Otis Ayer, M. D., which occurred at LeSueur, January 27, 1889, of pneumonia, the profession has lost one of its most eminent members, and the community among whom he so long labored one of its foremost citizens. He had reached the ripe age of seventy-two years and had been in the active practice of medicine forty-eight years, thirty-three of which were in Minnesota. His ardent love of the profession impelled him to continue his work up to within a few days of death, literally "dying in harness."

He was a man of marked individuality, which stamped itself upon all his acts. Of commanding stature and possessing great intellectual strength and analytical keenness, indeed, with an imperious will and great self-reliance, his presence was felt wherever he moved. And though a man of cultured intellect and acknowledged ability, he carried his

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varied endowments with the utmost modesty. He earned professional success by laborious and persevering industry that shrank from no emergency, and his long life was a ceaseless labor in behalf of suffering humanity.

Otis Ayer, M. D., was born in Hampton, New Hampshire, June 19, 1817. He received a liberal academic education in his native town, and after reading medicine with Dr. J. A. Dana, of New Hampton, entered the medical department of Dartmouth College, graduating in 1841. March, 1842, he graduated from the Jefferson Medical College, Philadelphia. After having enjoyed eleven years of successful practice in his native town he removed to New London. Here he remained for three years, when he removed to LeSueur, Minnesota, in 1856.

Dr. Ayer was the first vice-president of the Minnesota Medical Society, and in 1877 became its president. He was twice president of the Minnesota Valley Medical Association. He was for fifteen years examining surgeon for pensions. He was for many years surgeon for the Chicago, St. Paul, Minneapolis & Omaha Railroad Company, and was also president of the LeSueur board of health, and the Old Settlers' Association. He also was president of the Minnesota Valley Medical Association.

Dr. Ayer married Miss Narcissa F. Smith of Shoreham, Vt., June 27, 1845. Mrs. Ayer is remembered as a most lovely and estimable person, possessed of those graces of mind and person that go to make up the affectionate and accomplished wife. She died at LeSueur, June 1, 1873.

This brief history of the service of the deceased would be far from complete without allusion to his patriotic service in defense of his State and country. The news of the Indian outbreak of 1862 was received in the village of LeSueur on the morning of August 19th. Within a few hours a company

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of heroic citizens of that village was organized, and at midnight of the same day were in the town of New Ulm and participating in its defense. Of that company Dr. Ayer was a most active and conspicuous figure. He was a leading spirit in its organization, and during the trying events that followed. His sagacious advice contributed largely to the successful defense of the town. His professional services on that occasion were equally important. He was untiring in caring for the sick and wounded, and in various ways contributing to the comforts of the distressed inhabitants.

February 21, 1863, Dr. Ayer was commissioned assistant surgeon of the 2d Regiment Minnesota Volunteers, then serving with the Army of the Cumberland. He participated in the battle of Chicamauga, and while in attendance upon the wounded was taken prisoner, but was soon paroled. Impaired health, from exposure and trying duties incident to his position, compelled him to resign December 23, 1863. He left his position with the gratitude, respect and love of the entire regiment.

Locating at LeSueur in 1857, he entered with zeal and energy into the practice of his profession. This locality was at this time almost a wilderness, sparsely settled, hardly marked by roads. His work lay over broad prairies and through an almost unbroken forest. In such a field his work was of a most laborious, and at times of an extremely dangerous character. But a vigorous constitution and enthusiastic love for his profession made this a work of love. And later in life, when failing health made it impossible to make his long visits in the ordinary way, he had a bed arranged in his conveyance and made his rounds in the recumbent position. This immense work extending over nearly a half century, developed the broad, self-reliant and successful physician, and enabled him to hold his field against all

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competition. In his professional relations his code of honor was rigid and high-toned. For more than a quarter of a century the writer met him often, in consultation and socially, and it is a great pleasure to bear testimony that during that long period no unprofessional act occurred to disturb their perfectly friendly relations. Comparatively early in his career he was afflicted with deafness, which increased with advancing years, but he did not allow it to seriously interfere with the practice of his profession, or to cloud his life. In social life he was thoroughly genial, with a happy story and ready wit, which served to enliven every occasion.

It has been said that a life is illy spent that is not a preparation for that which is to come. This seemed to be a guiding precept of his life. His daily life was of the most exemplary character, he was active in all good works, was for fifty years a most devout follower of that great teacher who manifested his divinity by healing the sick, giving sight to the blind and voice to the dumb. Therefore when the summons came it found him with his armor on, ready for the march, "sustained and soothed by an unfaltering trust."

FRANCIS HENRY MILLIGAN.

(Died Dec. 5, 1888, at his home in Wabasha, Minn., aged 58 years.)

In the death of Dr. Milligan the profession of this State has lost one of its oldest and most honored members. He came here at an early day, was a pioneer of the educated physicians of the then new State, and during his long career in professional and public life few men have been more widely and favorably known.

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He leaves a widow and two children, a son and a daughter, to mourn the loss of a beloved and affectionate father.

The following sketch is an extract from a brief memoir published by the Military Order of the Loyal Legion of the United States, of which Dr. Milligan was an honored member:

"Francis Henry Milligan who was elected a companion of the Minnesota Commandery of the Military Order of the Loyal Legion, April 7, 1886, was born in Philadelphia, Pa., December 8, 1830. He graduated at the Jefferson Medical College as M. D. in 1851; resided in St. Louis until 1853, when he removed to Wabasha, Minnesota, where he resided until his death, which occurred December 5, 1888. He was appointed First Assistant Surgeon of the Third Regiment Minnesota Infantry, U. S. Volunteers, December 16, 1861, and served with that regiment the rest of that winter, while it was employed in Kentucky guarding the Louisville & Nashville Railroad—headquarters at Belmont—and until after its arrival the following March at Nashville. He was honorably discharged from that regiment April 8, 1862. December 1, 1864, he was appointed Assistant Surgeon of the Tenth Regiment Minnesota Infantry, U. S. Volunteers, was on duty with that regiment at the battle of Nashville and the siege of Spanish Fort, and was mustered out of service with the regiment August 19, 1865. He then resumed the practice of his profession at Wabasha, and continued actively engaged therein until his death. He served as President of the County and of the State Medical Societies, as Mayor of the City of Wabasha, as a member of the State Legislature, and always was a leading and public spirited member of his community. He was a man of strong intellect, a very able, skillful and conscientious physician and surgeon, and pos-

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sessed those generous and amiable traits that endeared him to all his acquaintances. It is not too much to say that both in the Third and Tenth Minnesota regiments he was beloved. His death is a public loss."

ADELARD GUERNON.

Dr. Adelard Guernon died suddenly in St. Paul on the 15th of January, 1889, in the forty-fifth year of his age. He was born of French-Canadian parents in the province of Quebec, Canada.

He obtained his medical education in Montreal and graduated in the spring of 1865. In the autumn of the same year he came to St. Paul, bringing his wife, *nee* Marie Robinson, whom he had married in Canada, with him; and who died in 1870, leaving a son and a daughter who survive their parents. In 1872 Dr. Guernon married Sophie A., eldest daughter of the late Dr. Braun, of Little Falls, and removed to that town.

During Dr. Guernon's residence in St. Paul, where he enjoyed a good practice, he was elected to the office of Coroner of Ramsey County and served the regular term.

Having removed to Little Falls he continued to reside there until July 14th, 1885, when he was first appointed collector of customs for Minnesota, with chief office at St. Vincent.

In Little Falls he speedily acquired an extensive practice and was largely interested in matters of public benefit. For ten years he was County Superintendent of Schools for Morrison County.

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On March 1st, 1887, he was reappointed Collector of Customs. Last year the collector's office was transferred to St. Paul, and he removed with his family to that city.

In November, 1881, while carrying on a laborious country practice, with much exposure, he contracted a rather severe attack of acute rheumatism, which confined him for several weeks, but his recovery seemed to be complete.

About two years before his death, however, there appeared symptoms suggestive of angina pectoris, also of diminished digestive power and of failure of nutrition. As time passed on the angina became more pronounced; and towards the last, physical signs of valvular disease were manifest.

At last the end came, almost in a moment, as had been anticipated, not only by his friends, but by himself.

By his second wife, surviving him, he leaves three sons and three daughters.

After an acquaintanceship of nearly twenty years with the late Dr. Adelard Guernon, the writer is able to say that he was a man of integrity of purpose, a conscientious and industrious practitioner of medicine and a trusty friend. To his courtesy and genial manner, all who knew him will attest.

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Presidents of the Society.

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FRANKLIN STAPLES,	1871–1872
W. W. MAYO,	1872–1873
W. W. SWEENEY,	1873–1874
N. B. HILL,	1874–1875
J. H. STEWART,	1875–1876
F. H. MILLIGAN,	1876–1877
OTIS AYER,	1877–1878
J. E. FINCH,	1878–1879
A. C. WEDGE,	1879–1880
A. J. STONE,	1880–1881
C. N. HEWITT,	1881–1882
P. H. MILLARD,	1882–1883
W. L. LINCOLN,	1883–1884
J. B. McGAUGHEY,	1884–1885
E. J. DAVIS,	1885–1886
H. H. KIMBALL,	1886–1887
C. F. McCOMB,	1887–1888
C. A. WHEATON,	1888–1889
J. H. DUNN,	1889–1890

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ROSTER.

The *italicised* names are those of members elected in 1889.

A. W. Abbott, Minneapolis.
E. J. Abbott, St. Paul.
E. D. Abell, Farmington.
J. H. Adair, Owatonna.
C. P. Adams, Hastings.
W. T. Adams, Elgin.
J. C. Adams, Lake City.
Wm. Alden, Tower.
A. G. Aldrich, Anoka.
Flora E. Aldrich, Anoka.
Chas. T. Allen, Minneapolis.
Frank Allport, Minneapolis.
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J. V. Anderson, Red Wing.
J. W. Andrews, Mankato.
Clara E. Atkinson, St. Paul.
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J. F. Baker, St. Paul.
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G. C. Barton, Buffalo.
G. Willis Bass, Minneapolis.
C. E. Bean, St. Paul.
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C. H. Boardman, St. Paul.
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J. E. Bowers, Rochester.
H. M. Bracken, Minneapolis.
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C. A. Chase, Minneapolis.
E. Y. Chilton, Howard Lake.
C. N. Clarke, St. Charles.
Ida Clarke, Rochester.
J. C. Cockburne, Minneapolis.
H. B. Cogswell, St. Paul.
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J. B. Cole, Minneiska.
E. E. Collins, Duluth.
D. T. Collins, Minneapolis.
A. T. Conley, Cannon Falls.
H. E. Conley, Cannon Falls.
D. M. Cool, Faribault.
C. O. Cooley, Madelia.
Geo. M. Coon, St. Paul.
Walter Courtney, Brainerd.
R. O. Craig, Janesville.
F. J. Cressy, Granite Falls.
C. A. Cromett, Wadena.
E. W. Cross, Rochester.
D. S. Cummings, Waseca.
Nels G. Dahlstedt, Minneapolis.
A. W. Daniels, St. Peter.
C. E. Dampier, Crookston.
E. J. Davis, Mankato.
Wm. Davis, St. Paul.
G. W. Davis, Duluth.
H. W. Davis, St. Paul.
David Day, St. Paul.

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F. Dedolph, St. Paul.
Le Grand N. Denslow, St. Paul.
Godfrey Deziel, Minneapolis.
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J. C. Fitch, Hastings.
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G. F. French, Minneapolis.
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C. Gronwald, Norway.
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S. F. Hance, Minneapolis.
P. Sprague Haskell, St. Paul.
V. J. Hawkins, St. Paul.
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C. N. Hewitt, Red Wing.
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Knute Hoegh, Minneapolis.
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Henry E. Holmes, Minneapolis.
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L. D. Jackson, Grand Meadow.
R. N. Jackson Faribault.
Bruno Jaenig, Red Wing.
J. H. James, St. Peter.
H. D. Jenckes, Sauk Rapids.
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J. P. Johnson, Blooming Prairie.
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Philo E. Jones, Red Wing.
Talbot Jones, St. Paul.
W. A. Jones, Minneapolis.
C. R. J. Kellum, Heron Lake.
Edward D. Keyes, Winona.
C. R. Keyes, Byron.
V. P. Kennedy, Litchfield.
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P. N. Kelly, Rochester.
J. T. Kietsinger, Minneapolis.
Arthur F. Kilbourne, Rochester.
S. D. Kilvington, Minneapolis.
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J. M. Kistler, Minneapolis.
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J. R. Kinney, Minneapolis.
John Kurtz, Moorhead.
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N. S. Lane, North St. Paul.
George F. La Paul, Minneapolis.
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H. E. Latz, Minneapolis.
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A. H. Lindley, Minneapolis.
W. B. Linton, Merriam Park.
J. Warren Little, Minneapolis.
Q A. Lowe Wabasha.
C. E. Lum, Wadena.
C. E. Lundgren, St. Paul.
A. Macdonald, St. Paul.
J. W. Macdonold, Minneapolis.
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W. J. Mayo, Rochester.
C. H. Mayo, Rochester.
B. J. Merrill, Stillwater.
G. F. Merritt, St. Peter.
Jas. McAuliffe, Duluth.
C. A. McCollum, Minneapolis.
C. F. McComb, Duluth.
S. C. McCormick, Duluth.
Thomas McDavitt, Winona.
S. W. McEwan, Alexandria.
J. B. McGaughey, Winona.
John McLean, Moorhead.
H. L. McKinstry, Zumbrota.
W. R. McMahan, Mankato.
O. H. McMichael, Vernon Centre.
R. S. McMurdy, Minneapolis.
John G. McNamara, St. Paul.
M. Mikkelsen, Delavan.
P. H. Millard, St. Paul.
Lester C. Mitchell, Minneapolis.
G. R. Maloney, Belle Plaine.
J. B. Moffett, Minneapolis.
T. H. Monahan, Minneapolis.
R. L. Moore, Spring Valley.
J. T. Moore, Minneapolis.
J. E. Moore, Minneapolis.
W. B. Morley, St. Paul.
G. D. Moyer, Montevideo.
F. S. Muckey, Minneapolis.
A. Mueller, New Ulm.
J. F. Mulholland, Jordan.
L. H. Munger, Fair Haven.
A. J. Murdock, Minneapolis.
J. H. Murphy, St. Paul.
Garrett Murphy, Garden City.
L. Murphy, Montevideo.
J. W. Murray, Minneapolis.
P. E. Nagle, Minneapolis.
William Newhall, Red Wing.
Geo. W. Nichols, Merriam Park.
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Elizabeth S. D. Norred, Minneapolis.
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Justus Obage, St. Paul.
A. Ortman, Minneapolis.
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John Pearson, Duluth.
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J. R. Phillips, Dundas.
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Alcinda Auten Pine, St. Paul.
W. B. Pineo, Minneapolis.
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James A. Quinn, St. Paul.
T. J. Rainey, Minneapolis.
A. C. La Mothe Ramsey, St. Cloud.
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W. Richeson, St. Paul.
C. E. Riggs, St. Paul.
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Park Ritchie, St. Paul.
Alex. Rixa, St. Joseph.
Warren B. Robb, St. Paul.
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F. M. Rose, Faribault.
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S. B. Sheardown, Winona.
T. W. Sheardown, Chicago.
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A. Shimonek, St. Paul.
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Charles Simpson, Minneapolis.
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V. Smith, St. Paul.
H. Sneve, Minneapolis.
Olaf Sohlberg, St. Paul.
A. E. Spaulding, Luverne.
E. C. Spencer, St. Paul.
C. J. Spratt, Minneapolis.
Franklin Staples, Minneapolis.
A. H. Steen, Cottage Grove.
J. H. Stewart, St. Paul.
C. A. Stewart, Duluth.
J. Clark Stewart, Minneapolis.
A. W. Stinchfield, Eyota.
S. M. Stocker, Duluth.
E. H. Stockton, Minneapolis.
A. G. Stoddard, Beaver Falls.
A. J. Stone, St. Paul.
J. J. Stone, Wabasha.
W. M. Stratton, Granite Falls.
Daniel Straw, Wells.
O. C. Strickler, New Ulm.
M. Sullivan, Adrian.

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H. B. Sweetser, Minneapolis.
C. F. Sweney, St. Paul.
Arthur Sweeney, St. Paul.
A. B. Sweet, Hanly Falls.
J. H. Stuart, Minneapolis.
C. H. Tasker, Anoka.
N. S. Tefft, Plainview.
Tonnes Thams, Minneapolis.
David O. Thomas, Minneapolis.
O. F. Thomas, Lakeland.
J. W. Thompson, St. Paul.
C. M. Thompson, Northfield.
W. Thorne, Hastings.
J. H. Tilford, Windom.
J. M. Todd, Madison.
F. E. Towers, Minneapolis.
M. A. Trow, Chatfield.
Wm. G. W. Tupper, Minneapolis.
W. H. Twiford, Geneva.
J. Q. A. Vale, Homer.
Max P. Van der Horck, Minneapolis.
F. W. Van Slyke, St. Paul.
G. Vivian, Alexandria.
W. C. Voight, Stillwater.
Kee Wakefield, Hutchinson.
Wm. Wakefield, Lake Benton.
Belle M. Walrath, St. Paul.
H. S. Walrath, St. Paul.
S. S. Wallbank, Duluth.
Anes F. Wass, Minneapolis.
Lizzie R. Wass, Minneapolis.
O. A. Watier, Stillwater.
A. C. Wedge, Albert Lea.
C. L. Wells, Minneapolis.
J. W. B. Welcome, Sleepy Eye.
Paul West, Little Falls.
A. Wharton, St. Paul.
C. A. Wheaton, St. Paul.
H. M. Wheeler, Grand Forks, N. Dak.
A. S. Whetstone, Minneapolis.
Mary Snoddy Whetstone, Minneapolis.
N. K. Whittemore, Elk River.
Cornelius Williams. St. Paul.
C. B. Witherle, St. Paul.
H. H. Wilcox, Albert Lea.
Irving D. Wiltrout, Minneapolis.
G. W. Wood, Faribault.
E. S. Wood, St. Paul.
M. E. Woodling, Minneapolis.
F. R. Woodward, Minneapolis.
C. J. Woolway, St. Paul.
S. J Wooster, Minneapolis.
Arthur Young, Prescott, Wis.
E. B. Zier, Minneapolis.

HONORARY MEMBERS.

C. H. Alden, St. Paul.
C. B. Ayers, Omaha, Neb.
Wm. Baldwin, St. Paul.
Louis Bauer, St. Louis, Mo.
E. C. Dudley, Chicago, Ill.
F. W. Epley, New Richmond, Wis.
Christian Fenger, Chicago, Ill.
J. B. Griswold, Grand Rapids, Mich.
Otis Hoyt, Hudson, Wis.
W. F. Lewis, Mankato, Minn.
C. Carli, Stillwater, Minn.
J. B. LeBlond, Sioux Falls, D. T.
C. T. Parkes, Chicago, Ill.
Glover Perin, St. Paul.
J. W. Reed, Lime Springs, Iowa.
John B. Shoemaker, Philadelphia, Penn.
F. R. Smith, St. Paul, Minn.
A. B. Stuart, Santa Rosa, Cal.

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DECEASED MEMBERS.

A. E. Ames, Minneapolis.
Francis Atwood, St. Paul.
Otis Ayer, Le Sueur.
E. T. Bingham, Medford.
Solomon Blood, Owatonna.
W. H. Byford, Jr., Minneapolis.
Perry Chance, Delano.
W. W. Clark, Mankato.
H. L. Coon, Northfield.
F. B. Etheridge, Hastings.
E. N. Fairbanks, Austin.
P. J. Goodhue, St. Paul.
S. D. Grant, Watertown.
A. Guernon, Little Falls.
D. W. Hand, St. Paul.
H. C. Hand, St. Paul.
A. B. Hawley, Red Wing.
P. A. Heitz, St. Paul.
N. B. Hill, Minneapolis.
J. C. Jones, Mankato.
G. M. Lambert, Stillwater.
F. Lawson, Osseo.
G. A. Lamb, Minneapolis.
Daniel Leasure, St. Paul.
S. H. Lindley, Minneapolis.
C. Lord, Shakopee.
P. McKeon, Minneapolis.
H. McMahon, Sauk Rapids.
Winthrop Miller, Minneapolis.
F. H. Milligan, Wabasha.
F. W. H. Muller, Henderson.
H. F. Noyes, Stillwater.
B. B. Palmer, Sauk Centre.
Ralph Parkin, Minnesota Lake.
W. K. Perrine, Minneapolis.
J. B. Phillips, St. Paul.
T. R. Potts, St. Paul.
J. K. Reiner, Stillwater.
W. H. H. Richardson, Winona.
W. J. Sloan, U. S. A.
E. H. Smith, St. Paul.
J. S. Sprague, Hastings.
Jacob H. Stewart, St. Paul.
S. P. Stoddard, Lake Crystal.
W. W. Sweeney, Red Wing.
J. E. Tibbetts, Cannon Falls.
J. L. Wakefield, Shakopee.
J. S. Whilldin, St. Paul.
Samuel Willey, St. Paul.
Samuel Thayer, Burlington, Vt.

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THE NEXT MEETING OF THE SOCIETY

WILL BE HELD AT

SAINT PAUL,

On the THIRD THURSDAY OF JUNE, 1890.

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